

The Mushroom Journal



CONTENTS

In the Editor's opinion: Walk Tall	251
Mushrooms, Moulds and Management: J. T. Fletcher	252
Lavish German Textbook: FCA	256
Fred. C. Atkins writes about: Bukowski in Poland; a Darmycel Guide; and an International Journal?	258
<i>Correspondence:</i> Lessons to be learned from the Dutch: Peter Munns	260
When to add Gypsum: Norman Pizer	262
Economic aspects of mushroom growing — a Study Review: RLE	266
European Mushroom Growers' meeting: RLE	266
Increasing USA interest in Tray Lines	268
United Kingdom mushrooms to Sweden	268
Senior Management changes by the Heinz Company	269
Jersey Conference programme	270
Five years with the MGA: John Bazalgette	272
Death of Bill Harper	274
Workers' Holidays and Sick Pay; Wages and Hours	275
Sinden Award for Dr. N. W. Hussey	276
Silver Cup for Baddow Park Mushrooms	277
Golf: Growers again win Hensby Trophy	278
Small advertisements	Outside back cover

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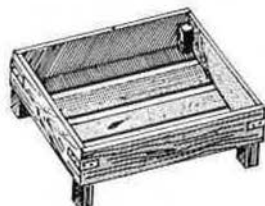
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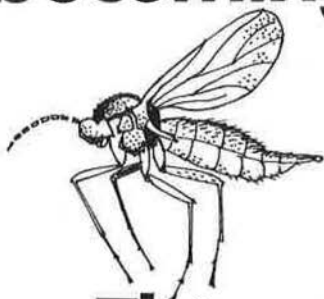


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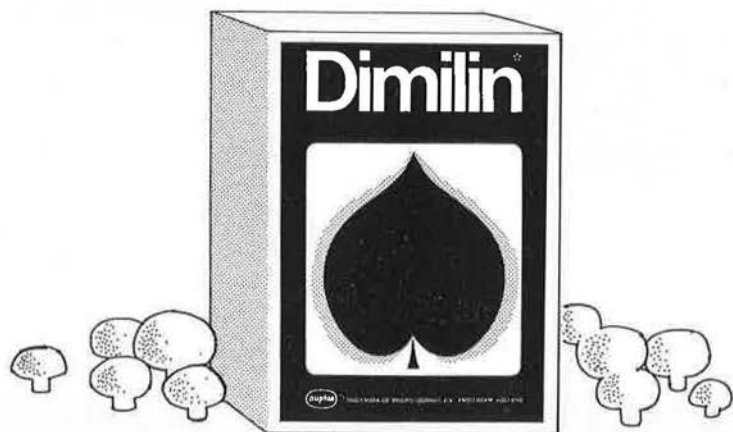
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In the Editor's opinion...

Walk Tall

The *Review of UK Horticulture Industry*, recently published by the Ministry of Agriculture, summarizes a technical review of the horticulture industry undertaken by the Agricultural Departments and the Farmers' Unions, and has been agreed by all the parties concerned.

Mushroom growers will, with every justification, walk a little taller following this report, showing as it does the progress made with the mushroom crop over recent years.

In spite of an 11% drop in the production area since 1974/75 and a 25% drop when the forecast 1976/77 figure is compared with that for 1973/74 — just over 4 million sq. ft. of bed area compared with 5,379,000 four years ago — forecast output of 48 thousand tonnes for the year just ended (June) with a farm gate value of £29.6 million adds further emphasis to the important place in UK horticulture now occupied by mushrooms. In glasshouse and protected-food crops, mushrooms are headed only by tomatoes (£41.9 m) and when compared with all vegetables the only other UK vegetable crops of greater value are cabbages (£40.8 m) and the expanding carrot crop (£30.3). Total value of all horticultural crops including fruit, nursery stock and flowers is put at £598 m.

The report provides a reasonably reassuring picture of horticulture in the UK and the ability of horticulturists to withstand fair competition from wherever it may come.

In a paragraph dealing specifically with mushrooms it has this to say: 'Mushrooms are an important protected crop with an annual output of some £26 million. Due to continued overproduction 1975 was a bad year but since then the production area has contracted by 11% and returns have improved. *The prospects for a more rationalized industry are encouraging*' — the italics are mine. 'The glasshouse and protected crops industry will in future face a period of increasing economic pressure in which it will compete effectively only by the adoption of improved technology, together with the best management and marketing techniques, *and with specific crop production programmes geared to satisfy identified market demands*' — and again the italics are mine.

Whilst the report notes that specialist horticultural holdings employed 10% less labour in 1975 than in 1971, and acknowledges the fact that larger holdings are best able to take full advantage of further economies in labour and introduction of suitable mechanization, it also recognizes the importance of small family units, a group which accounts for 10% of the labour force and which is able to supply outlets more local and isolated than those attracting large suppliers.

As I say, growers have every reason to walk tall.

WRA

MUSHROOMS, MOULDS AND MANAGEMENT

by J. T. Fletcher

Agricultural Development and Advisory Service,
Lawnswood, Leeds LS16 5PY

Dry bubble, caused by *Verticillium fungicola* (syn. *V. malthousei*) is now the most common fungus disease of the commercial crop (Gaze and Fletcher 1975). Its recent upsurge is largely attributable to the widespread occurrence of benomyl tolerant strains (Fletcher and Yarham 1976). The previous high degree of control achieved with benomyl resulted, on many farms, in a relaxation of the normal practices of hygiene. Bubble control is partly dependent upon the availability of effective fungicides, but also on the management of the farm, particularly in relation to hygiene. A high standard of hygiene is beneficial for control of both pests and diseases and will also help to minimize the population of weed moulds. This paper is a report of some of the research done by the Agricultural Development and Advisory Service in the Yorkshire and Lancashire Region, including work on the search for alternative materials to benomyl, and some studies on the efficiency of disinfectants, and the effects of weed moulds on the crop.

VERTICILLIUM FUNGICOLA CONTROL

Experiments with alternative fungicides

Bollen and van Zaayen (1975) found that benomyl tolerant *V. fungicola* (ED₅₀ 13 ppm) was not controlled by benomyl or related compounds. Various workers have reported trials with alternative materials (Gandy 1975, Bollen and van Zaayen 1975, Gandy and Spencer 1976), and chlorothalonil (Daconil) has shown promise. At the Fairfield Experimental Horticulture Station two formulations of chlorothalonil have been compared with benomyl and

zineb (freshly prepared and proprietary). In two experiments these fungicides were used following either a heavy or light casing infestation with *V. fungicola*. The strain of the pathogen was highly tolerant to benomyl (ED₅₀ 500 ppm). Benomyl was applied to the casing according to the manufacturer's recommendation. Chlorothalonil sprays were applied either one week after casing, and again two weeks later, or these two applications together with a third, one week after the second. The zineb spray treatments continued at weekly intervals throughout the crop, starting from one week after casing.

Where high inoculum levels were used, very little control was obtained with any of the fungicide treatments, and yields were well below those of the uninoculated untreated (Table 1). The highest disease level occurred in the benomyl treatment where it was 37% more than in the untreated inoculated control. This result is similar to that reported by Bollen and van Zaayen (1975), who also found that in the presence of benomyl, the disease level was greater than in its absence. At the low inoculum level, chlorothalonil gave a good control of the disease, with a yield increase slightly better than that of zineb. There was a slight reduction in yield with three applications of this fungicide compared with two. The results at low inoculum levels are similar to those reported by Gandy and Spencer (1975), although they obtained a good disease control with one application of chlorothalonil at a relatively high inoculum level. Our



Dr. J. T. Fletcher

work supports their conclusions that chlorothalonil is no substitute for benomyl, but where a benomyl tolerant strain of the pathogen is present, it is as good as zineb, and requires fewer applications. One, or at the most two, applications of chlorothalonil, applied some time after casing, can be expected to give some disease control, unless the inoculum level is very high.

These experimental results reflect the present state of the UK industry where many growers are finding *Verticillium* difficult to control when benomyl tolerant strains are present. There are no new fungicides in test that look promising.

Hygiene and the use of disinfectants

What should growers do with a *Verticillium* problem caused by a benomyl tolerant strain? Farm management plays an important role because it is only through careful hygiene that the inoculum levels can be reduced sufficiently to minimize the incidence of the disease, and increase the chances of a reasonable control with the alternative fungicides. Strict attention paid to all the details of hygiene on the farm will not only reduce the severity of the major diseases

but also minimize the effects of competitors and weed moulds.

Management must decide on a strict routine at crop termination for the emptying and disposal of the old crop, as well as for the cleaning of boxes and structure. Heat cookout, and methyl bromide methods, have been discussed at length in the past. If facilities are available, these methods are likely to give as good a 'clean up' as is possible. But where they cannot be used, or as an additional precaution, a suitable disinfectant can be applied. Ideally a disinfectant should not be toxic to the operators, or unpleasant to use, and should be effective for the job that it has been chosen to do. Little work has been done on the effects of disinfectants on mushroom pathogens. Most disinfectants used by mushroom farmers have been chosen because they are in common use in the agricultural industry. Some manufacturers support the use of their products by the mushroom industry but others do not. Some years ago Ganney (1969) emphasized the need for work on the assessment of the efficiency of the range of disinfectants used in the mushroom industry and he later specified a programme of hygiene (Ganney 1973).

Table 1
Fungicide experiments with benomyl tolerant *Verticillium fungicola*

	Yield of healthy mushroom*		Numbers of diseased mushrooms*	
	Low†	High	Low	High
Uninoculated untreated	107	390	36	30
Inoculated untreated	100	100	100	100
benomyl casing	104	110	84	137
chlorothalonil wp (2)	110	120	16	113
chlorothalonil wp (3)	108	140	16	99
chlorothalonil flw (2)	110	130	20	98
chlorothalonil flw (3)	90	130	14	90
Zineb weekly	103	110	19	114
tank-mix zineb weekly	92	100	28	100

* as a percentage of the inoculated untreated

† Inoculum concentration

Actual yields for the inoculated untreated = low inoculum concentration, 5.09 kg./plot
= high inoculum concentration, 1.0 kg./plot

Numbers of diseased mushrooms from the inoculated untreated
= low inoculum concentration 103
= high inoculum concentration 133

Table 2
Disinfectants and *Verticillium fungicola* — minimum effective concentration in various tests

Disinfectant	Recommended dilution (%)	Spore germination		Mycelial growth	
		Short Exposure	Long Exposure	Conc. gradient	Constant Conc.
Eragen	0.63	—	0.56	0.5	—
Finadet	0.3	—	0.3	—	1.0
SDNOC	0.1	—	0.025	0.025	0.025
Santobrite	2.0	2.0*	0.5	0.25	0.25
Quatkyl	1.25	—	0.63	0.63	—
Totalkyl	0.63	1.25	0.5	1.25	0.5
Nuodex	2.0	0.5	0.5	0.25	1.0
Sterizal	1.0	0.5	0.4	0.5	0.4
Formalin	5.0	1.0	0.5	0.5	0.5
Tego	1.0	0.5	0.25	—	—
Microsol	2.0	1.0	0.5	0.5	0.5
Sudol	2.0	1.0	0.5	1.0	0.5

* Minimum effective concentration — per cent

Disinfectants in common use include a wide range of different chemicals, although mushroom growers frequently use phenolic substances or formaldehyde. When applied, the disinfectant should kill the spores and the mycelium of pathogens and weed moulds, although it cannot be expected to do much more than surface sterilize. Disinfectants which merely inhibit the germination of spores or mycelial growth, are of less value than those that are lethal, as any inoculum left, even though it has been treated, will still be capable of inducing disease when the disinfectant is no longer present. With these factors in mind **Susan Ogilvy** (a student from Bath University), working at Leeds, tested a range of disinfectants for their effects on spore germination and mycelial growth of a benomyl tolerant isolate of *V. fungicola*. We are indebted to **Mr. Charles Spencer** of Greenhill Nurseries and to **Mr. G. W. Ganney** of James A. Gooding Ltd. for supplying the disinfectants. The disinfectants were made up at concentrations at and close to the recommended or commonly used concentrations, and tests were done in the following ways:

1. Spores were immersed in the disinfectants for twenty-five minutes, washed and checked for viability.

2. Spores were set to germinate in the disinfectants.
3. Agar plates were seeded with *V. fungicola*, and a filter paper disc immersed in the disinfectants was drained and placed in the centre of the plate. The zones of inhibition, when present, were measured after incubating the plates.
4. *V. fungicola* was cultured on agar with the disinfectant added to the medium.

Twelve materials were tested and the results indicate materials vary in their effectiveness according to the test method, but Santobrite, Totalkyl, Nuodex, Sterizal, Formalin, Microsol and Sudol were satisfactory in all tests (**Table 2**). The effective concentrations were at or less than the recommended or commonly used concentrations for these materials, with the exception of Totalkyl.

These tests were done with only one isolate of the pathogen, and further tests should be extended to include other isolates, as well as other pathogens, mushroom spores and other disinfectants. It may also be worth testing further samples of the same materials to see if there is variation between samples, as reported by **Holmes** (1971) for the fungicide zineb. These tests were done in

optimal conditions for effectiveness of the disinfectant, and frequently farm conditions are far from ideal. The likelihood of the disinfectant working on the farm will be increased by the thoroughness of the application; the greater the degree of cover the more chance of a good kill. Spraying, high volume, with a disinfectant is most likely to give a good cover of all surfaces, particularly if a wetter is added.

Fumigation with Formalin

Fumigation is another possibility and many growers have tried to use, or still do use, formaldehyde. This chemical is a very efficient spore killer, and evidence, largely from work on the disinfection of poultry and calf houses (Harry 1954), gives some indication of the way in which it is most likely to work. Formaldehyde gas is very soluble in water and rapidly dissolves in water films on boxes, bed surfaces or on the floor. Puddles ensure a rapid decrease in gas concentration in the treated house.

It is therefore important to avoid free water when fumigating. The gas concentration must be maintained for the treatment period so a gas-tight shed is very important. It should remain sealed for twenty-four hours after treatment. Gaseous formaldehyde is also many times more effective as a disinfectant than formaldehyde in solution. A temperature in excess of 50°F. (10°C.) and a humidity between 70–80% RH, will help to make the treatment effective.

There is a considerable controversy over the best rates of formaldehyde to use, and those recommended vary from 4 oz. to 20 oz. of formalin per 1,000 cubic ft. More experimental evidence is needed on the rate and method of application of the formaldehyde. There is some evidence to suggest that fogging machines may provide a simple and effective way of applying this chemical at the end of the crop.

WEED MOULDS

Weed moulds are associated with many crops. Some are said to be indicators of poor growing conditions, either in the compost or the environment. Others may be aggressive competitors, irrespective of the environment.

One of the commonest weed moulds *Peziza ostracoderma* (*Plicaria fulva*, *Botrytis* sp.) is frequently the subject of discussion, particularly in relation to its effect on cropping. It is said to be

an indicator of poor compost, colonizing areas where mushroom spawn is not growing (Rasmussen 1969, Atkins 1969). Yet it is frequently seen on the surface of the casing. Atkins (1974) considers that only a severe attack will reduce crops, probably by the excretion of toxins. Its effect on the growth of tomato plants is well known, and it would be surprising if it had no effect on mushroom growth.

Other moulds which occur in mushroom crops also need investigation, especially *Diehliomyces microsporus* (Truffle). Truffle has been a problem on a number of farms during the past two years. Work in New Zealand (Sanderson 1973) has indicated that fungicidal control might be possible with benomyl, but future success would seem to be very uncertain in view of the biological

Table 3
Weed moulds and mushroom yield

	Yield		Wt. as % of uninoculated
	Number	Wt.g.	
Uninoculated	196	1229	100
<i>Papulaspora byssina</i>	83	548	45
<i>Conidiobolus coronatus</i>	82	425	35
<i>Arthrobotrys superba</i>	260	1842	150
<i>Paecilomyces variotii</i>	76	588	48
<i>Peziza ostracoderma</i>	145	846	69

breakdown of this fungicide in mushroom casing (Fletcher, Mountfield and Butler 1976). In experiments at Leeds we had considerable difficulty establishing this fungus in mushroom compost, even under apparent optimal conditions.

In one small experiment we examined the effects on yield of various other moulds, all collected from the casing of crops. Unsterilized casing was infested, and used to case well-run compost. Yields and quality were recorded from eight replicates (each of 2 kg. of compost) of each treatment. The results show a large difference in yield between the treatments, with considerable reduction in yield with four of the fungi, and a large increase in yield with one, the nematode trapper *Arthrobotrys* (Table 3). Further experiments are required with these moulds to verify this results.

CONCLUSIONS

Recent changes in the efficiency of disease control on many farms has re-emphasized the need for strict programmes of hygiene. These have become increasingly necessary since the widespread development of benomyl tolerant strains of *V. fungicola*. Alternative fungicides, at present available, will stand a better chance of controlling disease if inoculum levels are low. It is essential that management gives full attention to hygiene. Disinfectants vary in their efficiency, and much more work is needed in order to determine which are best for the industry. Such programmes of hygiene will also minimize any effects of weed population on cropping.

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LAVISH GERMAN TEXTBOOK

Pilzanbau, the latest textbook on mushroom growing, was mentioned briefly in my column in *Mushroom Journal* 52 (April 1977). It has 318 pages, 141 remarkable photographs and 25 tables. The publishers are Eugen Ulmer Press, Stuttgart, Germany, and the price is DM 78, say £20.

The authors, Jan Lelley and Franz Schmaus, have much to say about *Agaricus bisporus* and recent developments such as bulk composting, pasteurizing and spawn-running, as well as such technicalities as the design of buildings and ventilation systems, the merits of ducts with graduated diameters of orifice compared with widening intervals between orifices of equal diameter, admirably sketched.

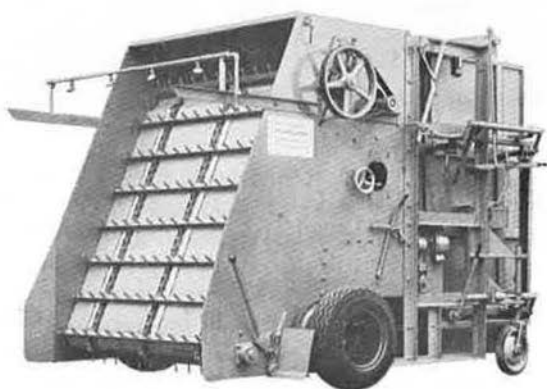
The authors discuss in some depth the culture of other edible fungi, tabulating the respective production levels (1974): *Agaricus bisporus* 575,000 tons p.a., *Lentinus edodes* 120,000, *Volvariella volvacea* 40,000, *Pleurotus ostreatus* 20,000, and *Flammulina velutipes* and *Auricularia auricula-judae* 10,000 each.

Seven chapters deal with the biology of these fungi, technical and economic, pest and disease problems, and reference is made to the developing interest in the growing of fungi by amateur gardeners in Germany. If an English version of this comprehensive book were available, the hobby could spread to Britain. Maybe in my old age I shall be culturing *Pleurotus* and *Flammulina* at home; they don't need a composting machine or filling line or trays or shelves!

The index and references are exhaustive and valuable.

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Fred. C. Atkins *writes about:*

BUKOWSKI IN POLAND — A DARMYCEL GUIDE — AN INTERNATIONAL JOURNAL?

Embarrassing though it is to have to confess it, I cannot say precisely when I first began talking to **Dr. Tadeusz Bukowski**, the distinguished mushroom scientist in Poland. Certainly we were corresponding in 1954, when I extracted from him the article on 'Growing in Poland' which appeared in *MGA Bulletin* 55 (July 1954) — where, curiously, he mentions the padi-straw mushroom as a chance 'weed fungus' in one of his beds 'affecting the yield seriously'.

My wife and I for many years have exchanged messages each Christmas with Tadeusz and his wife Leonarda and occasionally he and I talk about spawnmaking and mushrooms and pathogens. However, he is practically unknown in England; so I asked to be allowed to talk about him in this column. He was too modest to give me any data. Then I heard that he and **Dr. Marion Gapinski** were writing a book together on buildings for mushroom growing, so I asked Gapinski if he would help me. I am indebted to him for the background for the following 'success story'.

Dr. Bukowski is undoubtedly the most advanced mushroom grower in Poland. He comes from a gardening family and, even as a boy, was involved in some practical growing of mushrooms. He started his own little farm in Lvov just before the Second World War, in a cellar of a former brewery.

Thesis on Spore Germination

After the war he moved to Lodz where he graduated from the Agricultural High School with a degree in Agronomy. He then entered the University of Lodz and in 1951 obtained his M.Sc. (Botany) with a thesis on mushroom-spore germination. He was immediately given by the Warsaw Institute of Breeding and Acclimatization of Plants the task of working with the problems of industrial mushroom-spawn production.



Two years later he initiated the first Polish spawn plant, which was attached to OCNOS, a state-controlled seed distribution enterprise, and Poland no longer had to rely on imported spawn. And a firm base had been created for the development of commercial mushroom cultivation in the country. His work was greatly appreciated, and earned him a State Prize.

Tadeusz was appointed consultant to the State enterprise LAS, which deals with mushrooms and edible forest fungi (chanterelles and boletus, for example!), and incidentally assisted in the organization of several mushroom farms in Poland.

MGA Chairman and Bulletin Editor

Three years later, in 1956, he resigned to enable him to devote his energies to the Polish Horticultural Association, undertaking a considerable volume of advisory work with mushroom growers. In 1958 he organized a Mushroom Section affiliated to the Polish Horticultural Association and was elected its first chairman (as we reported in *MGA Bulletin* 106),

and edited their mushroom growers' *Biuletyn Produkcji Pieczarek*.

When the Horticultural Association was dissolved, he continued for several years to work with the Polish Horticultural Co-operative (CSO) as a senior inspector for mushroom growing.

Ever since 1961 he has been the expert adviser on mushroom growing and spawnmaking at the Polish Chamber of Foreign Trade in Warsaw.

In 1969 he obtained his doctor's degree in Agricultural Science from the High School of Agriculture in Poznan, his thesis being 'Poultry manure as a component of a mushroom compost'. And in 1972 he established his own spawn plant and mushroom farm.

Tadeusz is the author of many articles on mushroom growing. His textbook, *Pieczarek*, is in its fourth edition and has been translated into Russian. I have in my library the first edition, I believe, dated 1954.

One of the world's dedicated Mushroom Men! I wish he would visit England and see how his countrymen have succeeded in this curious, fascinating field.

Guided by Darmydel

The useful *Guide to Darlington Strains* has been superseded by a more ambitious *Guide to Darlington and Somydel spawn strains; Growing mushrooms; and General hygiene* — the three sections filed together in a handsome, loose-leaf binder.

This latest *Guide*, which I understand has been assembled by **Kevin Jamieson**, is described not as a full treatise on mushroom growing 'but is intended to give some assistance in the selection of spawn strains to suit their particular requirements as well as giving some general information on growing and hygiene'.

The fifteen large pages devoted to composting, including pasteurization, are complicated by a brave effort to be comprehensive; but it is a very complex subject which defies simplification and resists efforts at condensation and distillation. I have tried often and I know.

The section describing signs of good and bad pasteurization will be closely studied by growers, especially those who have been tussling this year with high ammonia levels. (I came across a word new to me: *homogenisation*. It does not

appear in any of my dictionaries, and I hope it never will!)

Spawning, spawn-running, casing, bringing into crop and cropping are all dealt with briefly but sensibly, and the series of typical record sheets enlightening. The section on General Hygiene merits high marks and will be regularly referred to.

An International Journal?

Sad news from the Australian MGA, of which I am so proud to be a Life Honorary Member. Secretary **John Miller** advises me that 'due to insufficient new material being available in any quantity to publish every two months we have decided to suspend our *Journal* temporarily, and just publish a brief *Newsletter*'. I hope he does mean 'temporarily'; I have always enjoyed Editor **Angus Latta's** fresh approach and cheery style.

You may recall that in our *Journal* 46 (October 1976) **J. R. Delcaire** suggested a new international mushroom magazine appearing four to six times yearly, with a world-wide readership. He added: 'Of course the purpose of a new international magazine would not be to kill the existing ones; the latter could adapt to their national readers in their own language and deal with their specific matters'.

When I had given much thought to the idea 'I reluctantly concluded it was impracticable' (*Mushroom Journal* 49, January/77). I am a professional journalist and know something about the cost of such enterprises. Could it hope to survive unless published under the aegis of a soundly-based organization such as one of the larger Mushroom Growers' Associations or Institutes?

But John Miller points out that 'there is a great deal of overlapping and reprinting of information throughout the world. We agree with and support the concept of an *International Journal of Edible Fungi* wherein research findings, both basic and applied, could be published together with other matters of interest to this industry world wide.

'There are probably many people who could add a forkful of suggestions to provide the foundations for such a *Journal* and produce a yield of practical information that would be contributed to and well read by the brotherhood

of mushroom growers and researchers throughout the world. The Tenth International Congress in France next June might be the right time to call a special meeting to initiate the project. An affiliation fee from each interested country according to the size of its production would seem to be a possibility'.

What do YOU think? We would be happy to publish views for and against.

Who said this?

Someone has asked me: 'Do you remember who it was who reported that inorganic supplemented N% should be discounted by half over organic when calculating for composts?'

I don't remember. I don't even know what it means! Ray Fryer was in my office when the letter arrived; he could not name the source, but volunteered this comment: 'Add sugar-beet pulp with your inorganic and I think you can rate it as equal'.

Did YOU say this? Information would be appreciated.



Correspondence . . .

LESSONS TO BE LEARNED FROM THE DUTCH

The printing, in the May *Journal*, of the talk given by Mr. P. J. C. Vedder to the Bournemouth Conference offers record of the significant steps which the Dutch mushroom growers have made in progressive standardization and mutual co-operation. The paper is a masterly résumé of one nation's endeavours and successes in modern mushroom production.

It was an invitation in 1970 from that delightful man Gerard Van Leeuwen, to 'come and see something of what we Dutch are doing to mushrooms' which initiated the first of many visits on my part. Each one, like the European Christmas cards, opened another window on to yet another perspective.

Gerard Van Leeuwen was my host and guide and it was with great sadness that I learnt of his passing away in 1975. Through him I was able to see the coming into fruition of the numerous ideas currently under investigation in Holland. An array of solid, well thought-out positive developments in shelf growing and the materials handling for that system.

Van Leeuwen's repeated aim was — 'Tell your industry of what we are doing here, there is much to be gained from our pooling ideas and efforts'. Sadly I failed to impress anyone in Britain at that time when I talked of what the Dutch were doing to shelf growing. In 1971 the attitude of most British growers was that trays had succeeded shelves many years ago.

I subsequently arranged for some of the Dutch ideas to be introduced into one of the Suffolk farms I was then managing. After some modifications to meet our modules and safety requirements we increased the installations. The modifications we made were made available to the Dutch manufacturers, and some of our ideas were incorporated into the general design.

In 1974 I suggested to Paul Middlebrook, then deeply involved in thinking on the future of the shelf/tray system, that he could gain much by 'going Dutch'. He took me at my word in the spring of 1975. What followed is now history, but the Dutch ideas are now at work here in the UK.

No one who was privileged, as I was, to visit the Dutch mushroom scene in those early days could have done other than wonder at the originality and diligence of the Dutch, and their willing openmindedness to share their ideas.

Now, with fuel oil and forklift costs becoming more expensive — hourly, and confronted as we are with the fearful inflations in timber prices for trays, the aesthetic simplicity of the basic Dutch systems, coupled with a sybaritic range of conversion/improvement possibilities as funds are available, offers much to any grower considering change.

My personal reserve regarding bulk composting grows, daily, less. However, the system of bulk-spawned composts currently under consideration in this country leaves me concernedly cold.

We would do well to remember that the possible increase by the Dutch of this development will be done by their co-operative and by their willing co-operation. The mushroom growers of Holland have much say and sway in the methods and systems employed in their industry. Whilst they may not share in the actual financial profits which new ideas generate, substantially in a personal sense, they do have very real gains in more general ways.

There are certain essential differences in the datum points of developments of the British and

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the Dutch mushroom industries. In Holland the government loans and grants were channelled to and through the co-operative. Thus the basic standardization was established. In Britain our growers received grant aid for individual enterprises, often diverse in their systems. To my mind the Horticultural 'improvement' Grants have done two things: they have been involved in the considerable wastage of public monies, and have created gulfs in our industry between those individuals who retained personal command of their 'growth', and those who 'grew' by means of additional external fundings which were attracted to the lure of 'free assets' in the sum of 38% of their investment. The diversification of approach and policy has prevented our industry from the sort of growth and control which the Dutch are now able to export around the world.

Do we in this country have the capacity and willingness to create such working co-operatives? Is the 'afternoon' too warm, and are we generally bemused by the problems which confront us in these difficult times?

I go into print with a question which has figured in my recent letters to friends: 'Is bulk-spawned compost an MGA matter?' Could we yet see an MGA and C (for Co-operative) under the auspices of British growers as a whole?

It is a little natural to be cautious of the Dutch and their fine school and their integrated research/development, capable of immediate assistance to any grower with a problem. I believe that the pure rationalization at the Horst school, made possible by the standardization of techniques, will do nothing but good for any grower fortunate enough to go, or be sent there. We certainly have nothing, as yet, in our country which can possibly compare.

Finally, may I offer reply to Mr. Vedder's letter and his comments regarding false truffle? I was aware that this competitor was not seen for many years on the Dutch farms (these days, it is seen increasingly less on my own!). I note that it has appeared as a result of the growing of *bitorquis*. I stand 'corrected'. Yet — I wonder . . . Do the Dutch now cook-out crops *in situ* as a standard? Have they some 'fail-safe' chemical for post cropping clearout? How long before spores of false truffle from emptied crops of *bitorquis* find their ways into the *bisporus* rooms?

Could this be another of the more recent developments from Holland, like bulk-spawning for general distribution from a central source, which we should beg some time on. We should consider the drop before we hurl ourselves into the growing of 'hot' mushrooms.

Peter W. Munns

Kingcup Mushrooms Ltd., Hinstock,
Market Drayton.

Correspondence . . .

WHEN TO ADD GYPSUM

In his Bath Course paper on Composts (*Mushroom Journal* 53, May 1977) Atkins advises the addition of gypsum to the compost not later than the second turn and mentions my recommendation in 1936 that it should be added as early as possible.

My work was done in a period of great depression, when the quality of hay and the quantity of grain and other concentrates fed to horses were respectively poorer and less than they had been, and the chances were that poor composts would result.

Methods of turning were not thorough and watering was casual and, as money was short, the least quantity of gypsum was recommended — although the cost was about 9d./ton of manure — so that early application was the surest procedure.

Nowadays, wheat straw is stiffer and of different composition, and a preliminary treatment to soften and open it up to fermentation may well go better in the absence of gypsum, as he advises.

Norman Pizer



SALES PROMOTION FOR MUSHROOMS

A report in the *Fruit Trades' Journal* (1 July/77) stated that Key Markets now run a monthly promotional campaign, and in May it was 'Mushroom Month', backed by a leading mushroom supplier, Chesswood (A.G. Linfield Ltd.)

In the four weeks an average of 11 tons of mushrooms per week were sold, giving a 30% increase in sales. Mushrooms were sold at 48p per lb.

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ECONOMIC ASPECTS OF MUSHROOM GROWING

This is the subject of a Survey recently published by the Department of Agricultural Economics of the University of Manchester as *Bulletin* 160/EC67. 'National Mushroom Study 1975' by Peter Thompson.*

Data were collected from fifty mushroom farms by four universities. The survey was started by the University of Leeds and transferred to Manchester for completion. The farms are well distributed over the country and grouped in six regions for comparison; they are also spread over the full range of size, with 13 small farms, under 40,000 sq. ft. laid in 1974, 26 laying 40,000–250,000, and 10 laying over 250,000 sq. ft. per annum.

Different growing systems, trays, 'non-tray users' which includes shelves and racks, and floor bed users were also compared as separate groups.

The Ministry of Agriculture, ADAS and the MGA assisted with supply of data and preparation of the questionnaire on which the Survey is based. Few University economists can be completely familiar with the practice and economics of mushroom growing, but Mr. Thompson obviously made a great effort to absorb the essentials; just occasionally his treatment shows a lack of complete grasp, but it does not invalidate the general treatment.

All data are converted to a unit of 10,000 sq. ft. laid, for comparison, and the main indicators of profitability used are Gross Margin = net sales minus Variable Costs of materials, and Gross Margin minus fuel and labour costs. Costs are also calculated per pound of mushrooms produced.

Three groups are distinguished by their economic success on this last basis, producing respectively Margins over Fuel and Labour of under £1,700, £1,700–£2,500, and over £2,500 per 10,000 sq. ft. laid. On average, yield per sq. ft. and profitability go together, even though the most profitable group has the highest labour and fuel costs.

Compost was obviously a difficult problem for cost analysis. For farms buying ready-mixed compost the weight and cost delivered to the farm are used. For farms making their own compost the weight and cost of manure are used but these were not always available and the results vary too widely to be helpful.

There is also a section analysing the future intentions, with regard to development, of the participants.

The Survey is well worth reading and it would be particularly interesting for those with access to the results of the ADAS Survey to compare the two.

The University of Manchester apparently intends to repeat this exercise, possibly in 1985.

Production figures for EEC countries are given and agree with those in general use, but the figures for imports and exports do not. It would be useful to know which are correct but that may be too much to hope for.

RLE

**Bulletin* 160/EC67, 'National Mushroom Study 1975', available from University of Manchester, Department of Agricultural Economics, Manchester M13 9PL, price 75p plus 14p for postage.



EUROPEAN MUSHROOM GROWERS MEETING

A second meeting of representatives of EEC Mushroom Growers' Associations was held in Paris on 3rd June 1977, with M. J-L. Carpentier as chairman. MGA was represented by Mr. D Locke and Dr. R. L. Edwards.

Some production figures for 1976 were presented and discussed. It was agreed that to avoid confusion each country should in future prepare and identify data as trimmed or untrimmed mushrooms, according to its normal practice, and a standard conversion factor of 100 kg. untrimmed = 80 kg. trimmed should be used for comparisons. Data will be based on the calendar year.

For canned mushrooms gross contents and where possible equivalent fresh weights should be given.

The next meeting, to be held in November 1977, will continue this statistical work and will start to examine use of pesticides, relevant regulations and tolerance limits for residues.

RLE

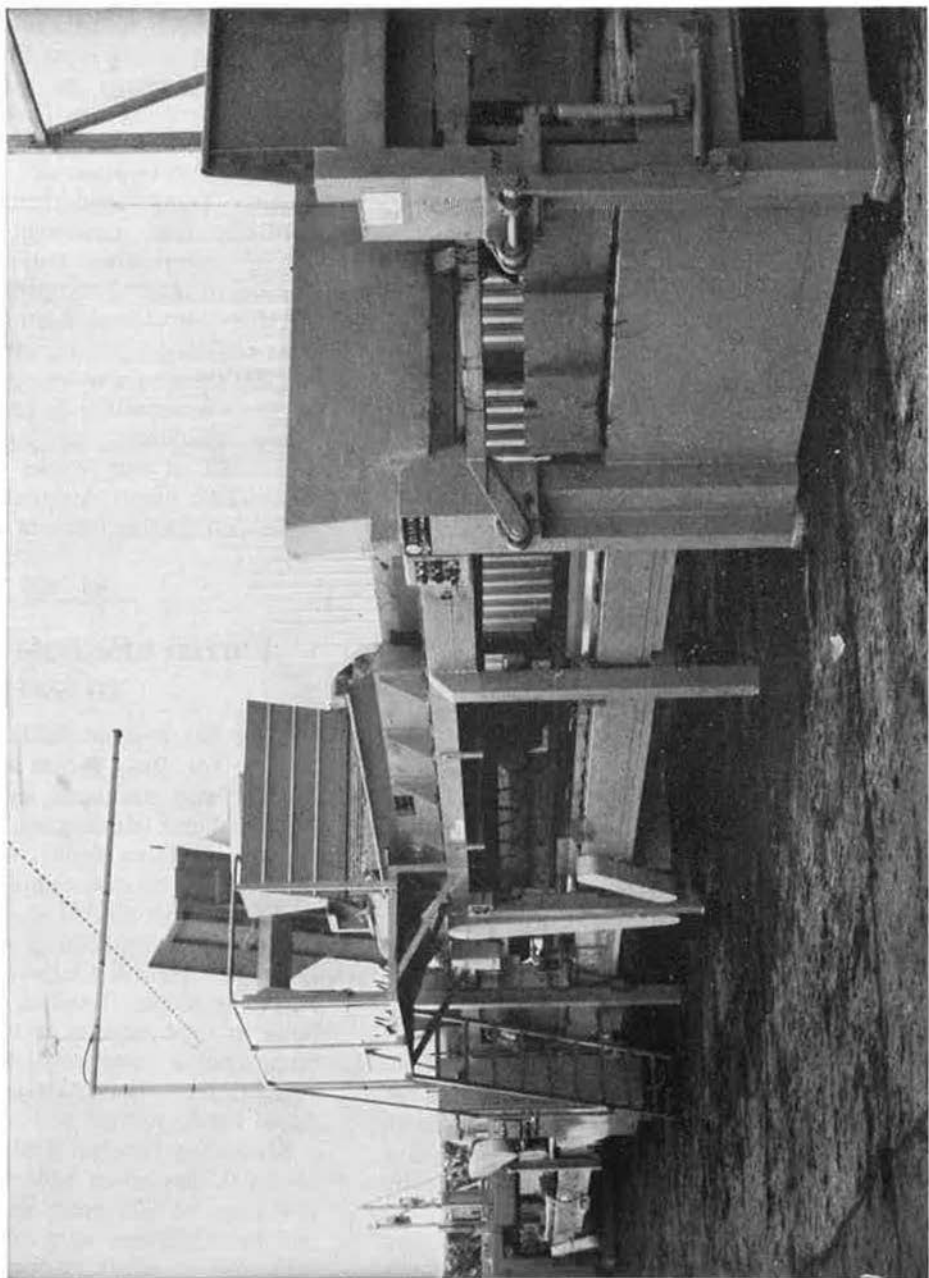


CORYN LUXMOORE

M. Coryn Luxmoore (68), founder director of Snowcap Mushrooms, Yaxley, Peterborough, died on Saturday, 30th July.



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INCREASING USA INTEREST IN TRAY LINES

Current orders and enquiries mainly from the United States of America show a marked increase in tray lines for mushroom farms, says a report from **Engineering Design and Production Ltd.**, of Catfield, Norfolk, who are at present manufacturing three tray lines for one mushroom farm in the USA.

The first line of the three (tested late July for dispatch August 1977) is capable of the following automatic processes: Dump casing, dump compost, wash/brush and fill, each section with its individual process selection button mounted on the single control console. The line will function completely automatically at 200 trays per hour on 7 ft. 6 in. x 4 ft. trays.

The line is complete with elevators for transferring the dumped casing and dumped compost into two lorries. The compost for filling is transported to the machine via a 100 ft. **Traymaster** belt lowerator down a hillside from a Traymaster compost regulator which is being loaded by a large front-loader vehicle.

The second line (to be tested at the end of August 1977 for dispatch September 1977) is basically a spawning line with 'topping-up' facility, an additive dispenser and mixer unit plus an extra spawn dispenser for 'top-dressing'. The topping-up unit is complete with integral hydraulic single tray tipper and is also designed for 'emergency casing' should it become necessary. This line also runs automatically at 200 trays per hour and is controlled from a single console.

The last line (due for testing early October for dispatch late October) is a casing line fitted with a dispenser for spawn or additives. The line speed is 200 trays per hour running automatically from one control console.

All three lines are complete with their own individual spillage collection and return system plus loading and unloading accumulators. Each line will be containerized for shipment to the United States of America where installation will be supervised by Traymaster personnel.

Sales of Traymaster Composters are going well, the main interest being in the 2,000 ESB (2 metres wide, drum and single thrower, electric category). This composter, of the straight throw-back type, has been engineered

by Traymaster to appeal to the smaller grower without detracting from the Traymaster quality, and can currently be purchased for around £9,000.00 ex works. One of the 2,000 ESB Composters at present being manufactured is for export to Cyprus.

Also being manufactured are automatic controls, flap assemblies and trunking for tunnel composting and conventional peak-heating in trays. Traymaster have been producing this control equipment for several years now, thus enabling a proven product to be available for this growing market.

Anyone interested in seeing any of the foregoing machinery or equipment would be welcomed at our works and should contact Traymaster direct. Alternatively please write for details on specific items of interest.



UNITED KINGDOM MUSHROOMS TO SWEDEN

Sweden has become the latest country to show a taste for Blue Prince mushroom prepacks. Grown and packaged by W. Darlington & Sons Limited, Rustington, Sussex, at their five United Kingdom farms, the fresh mushrooms have rapidly become established in the discriminating Swedish market.

The export opportunity arose following a call from Carl-Henrik Cedraeus, the head of UK-based Swedeline Limited, a company specializing in food exports to Scandinavia. He had recognized a temporary shortage in the usual supplies from the Eastern Bloc countries and asked Darlington's if they would fill the gap.

Marketing Director Trevor Smith of Darlington's was pleased to fulfil the initial order for a few trays of 200 gram prepacks but both he and Mr. Cedraeus were astonished and pleased with the immediate response from the Swedish buyers. The appearance of the Blue Prince mushrooms had made an immediate impact with the Swedish consumers and the blue pre-pack and trays fitted well into the grocery departments of the major supermarkets and stores.

Regular weekly orders are now processed from the Blue Prince headquarters and mushrooms from the company farms are supplied to



Carl Cedraeus, Swedeline Limited, and Trevor Smith, Darlington & Sons Limited, checking on the quality of Blue Prince mushroom prepacks in the grocery section of I.C.A. Supermarket in Stockholm.

London Airport for shipment by regular flights to Stockholm and Gothenburg. The present level of sales is running at around two tonnes per week. Having farms close to Gatwick and Heathrow Airports is a great benefit to Darlington as they can have their produce picked, packed and delivered to the Swedish stores within 24 hours. This means that they have a fresh, high-quality product on sale in the same time scale as to their UK customers.

Trevor Smith has recently returned from a visit to Stockholm where he made contact with all the various links in the chain of distribution to ensure that his product was packaged and presented in the correct manner for the Swedish market.

The last and most vital area — the consumer — was met during a visit to the large I.C.A. supermarket store in Stockholm where he spoke with both store manager and customers. As a result a new export label is being designed to

give further product identification to the Blue Prince mushroom prepack.

'When your product obtains recognition and acceptance in the sophisticated Swedish market, it is a measure of the high standards and quality that our staff throughout the group strive for and maintain 365 days a year', said Mr. Smith. 'The comment from the Swedish consumer is in their actions — they continue to purchase our Blue Prince mushroom prepacks.'



MANAGEMENT OF HEINZ MUSHROOM OPERATIONS

The H. J. Heinz Company Ltd., announced, in a Press statement (25th July), that George A. Corrin, formerly managing director of W. Darlington & Sons Ltd., has assumed control of the Heinz world-wide mushroom interests including spawn and mushroom-growing activities, and Trevor W. A. Smith, sales and marketing director of W. Darlington & Sons Ltd., has been promoted to managing director of that company. Hugh Owens, from the Heinz organization, is Darlington's new marketing manager.

Pointing out, in the statement, that Darlington has five mushroom-growing farms, a mushroom compost operation and an agricultural fumigation unit, reference is made to the wide distribution of Darlington's mushrooms both at home and abroad, the latter exported under the widely distributed Blue Prince brand.

In addition to W. Darlington & Sons Ltd., the Heinz Company have extensive interests in mushroom spawn production and marketing, incorporating Darlington Mushroom Laboratories, Darmycol (UK) Ltd., and Somycol S.A. in Paris — the latter has spawn production units in France and Spain and marketing companies in Holland, Italy and the USA. Spawn from these various centres are marketed in most countries in the world.

Both George Corrin, a former MGA vice-chairman, and Trevor Smith, are well known in the UK mushroom industry. Hugh Owens comes to Darlington from the Heinz parent organization with wide experience of sales and marketing of food products to retail outlets.

Jersey Conference 1977

Delegates to the coming Mushroom Industry Conference in Jersey (28th September–2nd October) will note from the accompanying outline programme that in addition to speakers from the United Kingdom, papers are also to be given by well-known mushroom experts from France, Holland and Switzerland and that, by way of a change, little has been deliberately planned for the evenings, apart from the final banquet. This should allow plenty of time for private discussions, which form such an important part of any conference. The Hotel de France's night club below stairs will adequately cater for all tastes.

Golfers should make particular note of the fact that the MGA championship will be decided on Wednesday, 28th September, and of interest to the ladies is the fact that every effort is being made to organize a day trip to France, even though this will mean a pretty early start.

The Clay Pigeon Shoot has, of late, proved of little attraction and this year, by way of a change, it is hoped to organize a squash tournament — remember to bring your racquets.

Ticket application forms were enclosed with last month's *Journal* and it is most important that delegates should complete these as soon as possible and return them to the MGA office.

It has not been possible to publish paper summaries in this issue but it is hoped these will be available for the September *Journal*.

There is every indication that, as on the last Jersey occasion, many delegates will be coming from the main European countries, and like all others they may be sure of a very warm welcome.

MTC

CONFERENCE PROGRAMME

Wednesday, 28th September

13.30 hrs. Golf Competition at the La Maye Golf Club.

Thursday, 29th September

09.15 hrs. Chairman's welcome to delegates.
09.30 hrs. Ladies' outing to Island of Sark.

09.30 –
10.15 hrs. Lecture: Dick Rucklidge.
Title: *Verticillium — Progress in controlling Benomyl Resistant Species.*
Chairman: C. J. Bradfield.

10.15 –
11.00 hrs. Lecture: Sqdn. Ldr. P. J. Hearne.
Title: *And I did it My Way.*
Chairman: J. A. Bleazard.

11.00 –
11.30 hrs. Coffee and biscuits.

11.30 –
12.15 hrs. Lecture: Dr. H. J. Tschierpe.
Title: *A comparison of different growing methods.*
Chairman: P. J. Middlebrook.

12.15 –
14.30 hrs. Lunch.

14.30 –
15.15 hrs. Double session consisting of grower panel:
P. J. Middlebrook
N. Barnard
C. J. Bradfield
G. W. Ganney
Chairman: J. A. Gooding.

16.00 –
16.30 hrs. Tea

16.30 –
17.00 hrs. Lecture: Dr. Annemarie van Zaayen.
Title: *The immunity (or resistance) of Strains of 'Agaricus bitorquis' to Mushroom Virus Disease.*
Chairman: F. C. Atkins.

18.30 –
19.30 hrs. Overseas Reception with Senator Dupré as guest.

19.30 –
21.00 hrs. Dinner at leisure and evening free for delegates to enjoy.

Friday, 30th September

09.30 hrs. Coaches depart for Farm Walk at Jersey Mushrooms Ltd.

11.00 hrs. Coaches arrive at Jersey Mushrooms.

13.00 hrs. Coaches arrive back at Hotel de France.
Lunch.



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- 14.30 hrs. **Annual General Meeting** and Discussion Period.
- 16.00 –
- 16.30 hrs. Tea.
- 16.30 hrs. Discussion Period.
- 17.30 hrs (approx.) Executive Committee Meeting.
- 19.00 hrs. Dinner and then rest of evening at leisure.

Saturday, 1st October

- 09.30 –
- 10.15 hrs. Lecture: K. Miles
Title: *Mushroom Marketing Opportunities*.
Chairman: P. Cracknell.
- 10.15 –
- 11.00 hrs. Lecture: Dr. J. Delmas.
Title: *Peculiarities of Edible Fungi and Main Lines of Research*.
Chairman:
- 11.00 –
- 11.30 hrs. Coffee.
- 11.30 –
- 12.15 hrs. Lecture: G. A. Corrin.
Observations in the Mushroom Industry.
Chairman: C. Sander.
- 12.15 –
- 14.30 hrs. Lunch.
- 14.30 –
- 15.15 hrs. Lecture: G. C. J. Griffiths.
Title: *A World of Mushrooms*.
Chairman: J. Stewart-Wood.
- 15.15 –
- 16.00 hrs. Lecture: Dr. N. W. Hussey.
Title: *Growing Up with Mushrooms*.
Chairman: P. B. Stanley-Evans.
- 16.00 –
- 16.30 hrs. Tea.
- 19.00 –
- 20.00 hrs. Chairman's Reception.
- 20.00 hrs. Closing Banquet. Speeches by Chairman, exchange of Office, and speech by Vice-Chairman, followed by Guest Speaker and Presentation of the 1977 Sinden Award.
- 22.00–
- 02.00 hrs. Dancing for Guests.

FIVE YEARS WITH THE MGA

John Bazalgette writes a valedictory piece

It has been just a few weeks since I left the MGA and I have been reflecting on the five years that I have spent at Agriculture House. During that time I have seen many changes, most of which have made things more difficult for the grower. There has been the sudden ending of the HIS without warning, the continual spiral in the prices of oil and wood, wage increases, equal pay and so on. Any one of these problems taken in isolation would have been reasonably simple to cope with but coming, as they did, close on each other's tail meant that every ounce of initiative and improvising skill had to be mustered to keep a mushroom business alive.

Many farms suffered from a cash flow problem as did other British Industries in 1975 or early in 1976. Those farms that were unable to weather this tropical storm inevitably died and ironically each funeral brought new hope to those struggling to survive.

Things have slowly improved during the past year and I suspect that profits are once more in evidence. From the many lessons to be learned during the traumas of these times I select the following to be the most significant:

(1) The size of the UK Mushroom Industry must be carefully controlled. If production exceeds demand by only a fraction then prices will fall and hard times will come again. I believe that it would be in the interests of all growers to agree to adhere to an overall strategy on the optimum size of the UK Industry. This strategy should be designed by a committee consisting of growers representing all farm size categories and co-ordinated through the MGA Office where you have as your new Director someone who has very considerable experience in such matters.

(2) Now that the Publicity income is on the increase you should be sure that you build up a reserve. This reserve will earn you useful interest during normal times and during periods of high inflation will serve to hold the Spawn Contribution rate to an acceptable level to the membership by taking advantage of the high interest rates available during such times.

(3) Following from (1) and (2) above you will be able to increase the size of your market, and



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hence the size of your industry, by the judicious use of your increased Publicity income. Your Publicity Committee is packed tight with talent and experience and is most ably backed by true professionals in the form of Denis Locke and Valerie March. But also, and I think this is most important, you will be called on from time to time to take an active part in implementing the strategy formulated by your Committee and you must see to it that you do so with all the gusto and enthusiasm you can muster. In this manner you will all be able to have your share of the cake and the cake will gradually become bigger and bigger.

Many of you will say that all this is quite basic but it is my opinion that the issues to which I have referred are the most pressing of the time. Naturally there are many other actions which can be taken to obviate a recurrence of the recent troubles but I submit the above as the top priorities.

In closing I must use this very brief article as a vehicle to say how very much I admire the Mushroom Industry as a body of dedicated and professional men and women. And in so saying I am speaking not only of the United Kingdom growers but also of all our Overseas colleagues. May I thank the Chairmen and Sub-Committees who have conducted proceedings during my five years and all members from wherever they have come for the help, co-operation and friendship you have given me? I would also like to thank all those from the NFU who do so much for our industry; my stay with them has been unforgettable and I doubt if many members of the Association truly realize just how much the staff of the NFU does on our behalf.

I will not write anything on the subject of the MGA without mentioning the names of John and Joy Tuite-Dalton. Both served the Association for so long with their complete dedication and loyalty and achieved so much for the MGA, particularly in the field of Public Relations.

Finally I would like to thank Winston for all his wise council (has there ever been a better servant of the MGA?); also Valerie March for masterminding so well the Publicity affairs since John Tuite-Dalton left. Not least dear Margot and Caroline, who have worked so tirelessly and who have given so much loyalty to me while I was the Director. To have had these

two lovely girls in the office was to me a pleasure which I will never forget.

God bless you all.



BILL HARPER

Mr. Bernard Ivan (Bill) Harper, A.M.I.Struct.E., died on 4th July 1977 at Warneford Hospital, Leamington, after a brief illness. The funeral for family and close friends was held on 8th July at Oakley Wood Crematorium, Warwick. Mr. Dennis Lock attended on behalf of the Mushroom Growers' Association.



After wartime service as Captain in the Royal Engineers he at first returned to his former profession as a structural engineer but soon began experimenting with mushroom growing as a hobby. In 1957 he started commercial growing in two small sheds from which he soon developed a successful family enterprise trading as Harper Mushrooms at Four Winds, Claverdon, Warwick. In 1969 he was joined by his son-in-law, Mr. Enzo Focardi, and specialized in the production of high-quality mushrooms exclusively for the local Leamington Market.

Although he was by nature a quiet person, he studied closely all publications on topics of both scientific and cultural aspects of mushroom growing and developed a simple and unique portable shelf system of growing. He was, however, exceedingly sceptical of the many commonly-used fungicides and insecticides and

for those of us who had the opportunity of seeing his crops it is difficult to dispute that his beliefs had real foundation.

Bill Harper always made special efforts to attend MGA meetings and conferences as well as International Congress meetings. Other than a passionate interest in County and Test cricket he was totally devoted to mastering the art of mushroom cultivation and the Mushroom Growers' Association, which he joined in February 1958, has lost one of its loyal and true characters.

The sympathy of all his friends in the mushroom industry is extended to his wife, Mrs Rosalie Harper, and daughters and sons-in-law, Mr. & Mrs. Enzo Focardi and Mr. & Mrs. Ermanno Pancaldi.

The family business will continue to trade under the name Harper Mushrooms, Four Winds, Claverdon.

WAH



AGRICULTURAL WORKERS' HOLIDAY AND SICK-PAY ENTITLEMENT

At their meeting on Friday, 1st July, 1977 the Agricultural Wages Board for England and Wales resumed consideration of a claim by the workers' representatives which would:

- a. *increase holiday entitlement to four weeks;*
- b. *extend entitlement to sick-pay to regular part-time workers;*
- c. *abolish the 'three day waiting period' which currently applies during absences due to 'sickness' or 'injury' lasting under 10 qualifying days;*
- d. *introduce special payments for workers required to perform 'standby' duty.*

A reply to the claim was presented by Mr. G. A. Lewis for the employers' representatives and after discussion the Board adjourned further consideration of (a) and (d) until their next meeting on 20th September, 1977. The Board decided to leave (b) and (c) to be further considered at a review of the sick pay scheme in 1978.

Wages Structure

At their meeting the Board also considered objections to their proposals to add a new craft category — 'General Work and Farm Maintenance' to the Wages Structure.

By a unanimous decision the Board decided to confirm these proposals and make an Order introducing General Work and Farm Maintenance as a craft category for the purpose of the Order from 5th September, 1977. The new category will apply only to workers employed in agriculture before 29th May, 1972.



HORTICULTURAL WORKERS WAGES AND HOURS

Figures issued by the Ministry of Agriculture show that for the year ended March 1977 average weekly earnings (all grades) in horticulture worked out at £47.37 for an average working week of 42.8 hours. Over the three month period January–March 1977 the earnings figure was £48.88 for a 42.6 hour working week. Average wages throughout agriculture and horticulture worked out at £51.58 for a 46.1 hours average working week. Dairycowmen with £61.96 for a 52.5 hours week topped the earnings list with foremen getting £59.85 for a 45.3 hour week.

The minimum wage rates for regular whole-time men aged 20 years and over have, in Appointment Grade 1, risen from £24.69 in 1973 to £48.15 in 1977. For Grade 2 the figures are £23.07 to £45.10; Craftsmen £21.45 to £42.05, and Ordinary, £19.50 to £39.00. Equal pay for women in all grades was introduced in December 1975.



AGRICULTURAL DEVELOPMENT AND ADVISORY SERVICE

The second Annual Report of the Agriculture Service of the Ministry's Agricultural Development and Advisory Service was published in June.

The potential benefit to agricultural productivity from the introduction of new technology into farming practice has been recognized for many years and one of the main aims of ADAS, of which the Agriculture Service is part, is to provide farmers and growers with a constant flow of improved methods and techniques which have been developed and evaluated under commercial conditions.

In this Report, Horticulture and Livestock husbandry have been selected for particular

mention, including reference to some of the investigational and development work carried out at the Ministry's experimental farms and horticulture stations and in collaboration with the Agricultural Research Council.

Copies of the 'ADAS Agriculture Service Annual Report 1975-76', may be obtained from H.M. Stationery Office, or through booksellers, price £2.75 each (by post £2.93½).

NORTHERN REGIONAL AREA GROWERS MEET

About seventy MGA members and others met at Middlebrook Mushrooms' Gateforth Farm, near Selby, Yorkshire, on Thursday, 26th May, and were able to inspect, at first hand, the new nylon-net shelf-bed system of growing under the guidance of Mr. Paul Middlebrook.

A close inspection of the spawning of the compost plus the transport of the compost on to the beds, via a Bamford trailer to a Thilot Spawning Machine and thence to the beds, together with the winching of the nylon netting into the production sheds, was followed by a look at the bulk-pasteurization chamber and the equipment employed in the filling and emptying operations. This equipment included conveyors, feed-hopper, pull-out winch and special purpose net.

In addition, the visitors inspected the composting operation, with its Thilot Turning Machine, straw-cutting machine, the overhead crane and the new large Massey Ferguson Shovel.

After a splendid tea at a local hostelry Mr. Guy Lloyd of the Agricultural Training Board gave an excellent talk on apprenticeships and assistance available to the industry from the Training Board.

MUSHROOMS ON 'NATIONWIDE'

Following up the Press release about the Mushroom Exhibit and cookery demonstrations in the Women's Institute Pavilion at the Royal Show, Stoneleigh, BBC Television asked the MGA to stage a mushroom presentation for 'Nationwide'. The original intention was that the programme would be shown nationally but when the time came the programme lasting six minutes ten seconds was only shown in London and the South-east. Had advertising space been purchased for this region it would have cost

approximately £43,000, although it is appreciated that the maximum advertising space at one time is sixty seconds.

Valerie March, interviewed by Richard Stilgoe, discussed a number of dishes which she had prepared to show the versatility of cultivated mushrooms. How to select fresh mushrooms and prepare them for the freezer was also part of the programme. Richard Stilgoe then sang a song called 'Champignons de Paris' which he had written specially for his cabaret act when the MGA entertained the cookery press on 12th May, 1977 at Thornbury Castle (see report in this *Journal*).

SINDEN AWARD FOR DR. N. W. HUSSEY

The MGA's annual Sinden Award for outstanding contributions to the UK Mushroom Industry this year goes to Dr. N. W. (Joe) Hussey, of the Glasshouse Crops Research Institute. Dr. Hussey has been associated with the industry for twenty-one years. He is among the speakers at the forthcoming MGA conference in Jersey in late September.

JUBILEE COVERS FOR MUSHROOMS

Winterpick Mushrooms Ltd. of Horsham have been using special covers on their 3 lb. mushroom baskets to mark the Queen's Silver Jubilee.

The graphics, which are printed in red and blue on white lined chipboard, were designed by Jonathan Barton, son of the Chairman of Winterpick Mushrooms. They include the Union Jack superimposed over a map of the UK and a border of 77's.

The covers were manufactured by the Aylesford (Kent) Branch of Reed Corrugated Cases Limited, and Winterpick Mushrooms are delighted with them and say that market reaction to them has been very good.



MUSHROOM DISPLAY WINS SHOW AWARD



The cup-winning Baddow Park Mushrooms double stand with (left to right): Madeline Thew, Joan Cracknell, Mary Duxbury and Peter Cracknell, all wearing the T-shirts to Baddow Park's design.

A silver cup for the best stand in the special shopping precinct in a large marquee at the Essex Agricultural Society's show in June, was won by Baddow Park Mushrooms, of Baddow Park near Chelmsford, run by Peter Cracknell.

The award, which came as a complete surprise, was against competition not only from the many other stands in the huge marquee but also against the many outside stands devoted to rural crafts.

Peter, ably assisted by his wife Joan, organized the stand which included a special display of a tray of growing mushrooms backed by four large imitation mushrooms in fibreglass. In addition to selling T-shirts of their own design and carrying the Baddow Park Mushrooms special motif which Peter himself designed, MGA tea towels were also sold and thousands of recipe leaflets were distributed, all in the cause of mushroom publicity.

Special tasters of raw mushrooms, in Kraft 1,000 Island dressing, in a special sea-food dressing originating from Mrs. Cracknell, and sliced mushrooms with a liver paté, also proved extremely popular, especially with the younger generation.

Perhaps most important was the fact that, over the two days of the show 1,200 lb. of mushrooms were sold and of particular interest is the fact that whilst 415 lb. were sold in $\frac{1}{2}$ lb. pre-packs, 414 lb. went in 1 lb. packs. Prices charged were 25p $\frac{1}{2}$ lb., 45p 1 lb., and £1.90 for a 2-kilo ($4\frac{1}{2}$ lb.) chip basket.

It so happens that Baddow Park Mushrooms always display the Union Jack or red, white and blue, as part of their packaging display and this theme, in Jubilee year, was carried through to their double stand at this show.

Said Peter Cracknell afterwards: 'We were all thrilled to bits to win the trophy and it came as a complete surprise. We didn't even know that there was a competition and had been a little bit puzzled quite early on the first day when we saw a group of officials looking at our stand. Even then the penny didn't drop.' He added: 'Perhaps even more important was the ultimate sales figures. We were all very happy with the overall result.' Peter, as many will know, is a member of the MGA Publicity and Marketing Committee.



FOOD CONSUMPTION

According to the Ministry of Agriculture's *Food Facts* figures issued late in June and covering the first quarter of 1977, average expenditure per head for food consumed in the home rose by 23p (4.9%) to £4.90 per person per week, compared with the previous three month period. Compared with the first quarter of 1976, however, average expenditure on food rose by 76p (18.2%).

Foods which increased in price appreciably more than the overall average (20.5%) included fresh vegetables, which rose by 39%. The poor supply position for fresh vegetables stimulated demand for frozen vegetables, up 60% on the previous year. Purchases of canned vegetables, on the other hand, showed little change over the year.



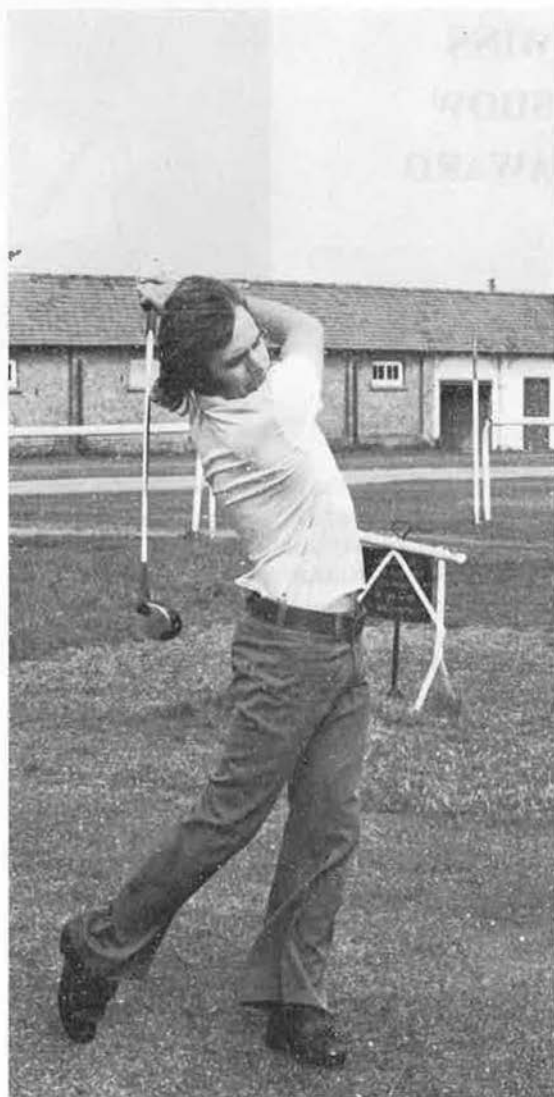
GOLF: GROWERS WIN HENSBY TROPHY FOR THIRD TIME

For the third time in succession since the inception of the annual Allied Trades versus Growers golf competition for the Hensby Trophy, a team of growers have beaten their rivals, recording, at the Newmarket Golf Club on Thursday, 30th June, their most comfortable victory to date.

'Ferd' Hensby of Hensby Composts Ltd., donors of the handsome trophy and individual mementoes of the occasion, led the Allied Trades team whilst Ruth Powl captained the team of

growers prior to handing over to next year's captain, Peter Cracknell of Baddow Park.

In the morning, prior to the 4-ball better ball Stableford Bogey competition, regarded by most as the more serious business of the day, a 10-hole Stableford, billed as a 'fun' competition, took place in the morning, when some keen limbering up by practically every one of the players set



John Speller driving off from the first tee. He used to play down to scratch and this year won the trophy presented by Reed Corrugated Cases Ltd — Bob Pinkerton is among the previous winners. Says John: 'I've got my priorities right and now devote much more time to mushroom growing'



A welcome drink of champagne at the tenth, for (left to right): Gordon Aistrup, Simon Fleet, John Maxwell and Tony Russell, who captained the Allied Trades team on the day. A non-competitor, June Pinkerton (foreground) dispensed drinks helped by Penny Batchelor

the adrenalin flowing and each of the seven threesomes was hotly contended. In the end Roger Foot took the major honours and the dozen golf balls kindly given, along with two other packs each of half a dozen balls, by David Cover, the mushroom tray expert from Chichester.

Bill Eggett was runner-up followed by John Stevens, with Bob Dumbreck, Reg Herbert and Simon Alderton completing the morning prize list. Bottles of wine, given by Hensby, made up the rest of the prizes in addition to the golf balls.

After an excellent lunch seven foursomes got down to the match proper, the first of the



Top: Awaiting their turn at the first tee. Left to right: Peter Cracknell, Doris Palmer, Gil Edge, Tony Russell, Ruth Powl and 'Ferd' Hensby. Bottom: Bob Pinkerton holes a short one, watched anxiously by 'Ferd' Hensby (left), Bob Dumbreck and Jack Chandler

competitors teeing off at 2 p.m. Alas for the Allied Trades, as 'Ferd' Hensby later lamented, they managed to win only one of the foursomes and, at the final totting up, the growers were home and dry by the handsome margin of 220 to 208.

It was just prior to the presentation of the trophy and awards, after dinner, that 'Ferd', with a touch of sadness — he and his partner (Jack Chandler) went two points down on the first hole and that was the margin at the end of



A bonus hug for Bob Dumbreck, after taking his prize of golf balls, from Sylvia Hensby



This mushroom T-shirt, worn by Marjorie Eggett, attracted much interest. Sylvia Hensby is about to drive

18 — promised that, next year, his team would make a particularly strong effort to break the growers' winning sequence. Maybe 'Ferd' should cast his net a little wider! He went on to welcome all the competitors and other friends and he in turn was warmly thanked by Peter Cracknell. Sylvia Hensby and Ruth Powl made the presentations.

Once again this annual event proved a quite splendid occasion and whilst some of the players may have lamented over the very tall grass which provided much of the rough and most certainly resulted in the loss of many balls, one player at least derived consolation from the fact that, in looking for his own ball hooked into tall grass he emerged triumphantly with four others he had picked up. There was too, the player who, half-way round, had to replenish his stock of balls from the professional's nearby shop but, as he said, it was all in a good cause.

Provisional arrangements were made to stage the 1978 competition on an Essex course, probably in May, but players interested should make early contact with either 'Ferd' Hensby or Peter Cracknell.

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