

THE COMPLEAT VEGETARIAN

WALK THE TALK

Cittapala &
Saddhaloka

EATING ONLY VEGETARIAN

When we learnt to meditate, perhaps one of the biggest differences our friends noticed was that we no longer ate meat. They may have wondered was this. just part of joining the Buddhist club? A membership requirement?

But as we all know, however much we may have yearned for bacon sandwiches, or chicken Kiev, we could no longer eat meat with a clear conscience. How could we practise the metta bhavana without changing this? And yet in time even the thought of eating meat became distasteful; now, it is not something many of us can do except under extreme circumstances.

Not eating meat also expresses very practically our commitment to practising the first precept of abstaining from taking life and cultivating loving kindness. We know that when we eat we act, our actions having far reaching consequences not just for ourselves but also for the other beings with whom we share this planet. By not eating meat we live out our ideals, and contribute significantly to a happier world.

Although thinking of ourselves as vegetarians we usually continue to drink milk and to eat eggs and cheese and other dairy products. It's easier that way, and it's seems safer for our health. And in any case, we are no longer obviously causing suffering and violence to animals by eating them. It's a good start; one in which we can take pride.

However eggs and dairy foods are not vegetables; they are foods which come from animals. Correctly speaking they are not part of

entirely vegetarian diet. And if we continue to cultivate metta as fully as possible and practice the first Precept with increasing thoroughness, then one day we wake up to what we are doing by supporting the dairy and poultry industries. The simple fact is that by eating dairy products and eggs we are still involved to almost the same degree as in our meat eating days in the considerable suffering of the animals involved.

In this article we remind you of, or, if you don't already know, tell you, some prominent facts about the dairy and poultry industries. We're sure you'll agree that, if possible, it would be best to no longer eat eggs, milk, cheese and other dairy products, to eat only vegetarian, to become a Compleat Vegetarian. But how can this be done safely? We summarise the research findings which point to the healthiness of a wholly vegetarian diet and address the questions of how eating a completely vegetarian diet provides our needs for protein, vitamins and minerals.

Outline:

- Down on the Farm
 - Milk & Cheese
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 - Protein
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DOWN ON THE FARM

'Old MacDonald had a farm, eyi, eyi, oh, and on that farm he had a ...'
so the nursery rhyme goes. Lurking in the back of minds, we may have rather romantic ideas of life in the country instilled from our children's story books. The reality of modern farming is very different indeed ...

MILK AND CHEESE

Whether milk appears magically in bottles on your doorstep every morning or out of a waxed carton from the supermarket shelves, everyone knows that milk comes from cows. But that's as far as many people think about it, not realising how badly the dairy cow is treated.

With a moment's reflection it's obvious that, a cow to be giving milk, like a human mother, has to give birth; the cow's milk is clearly for her calf. And yet the modern dairy cow (by contrast to the beef cow) has been bred to give much more milk than her calf needs so that the excess can be used for human consumption. On the face of it this seems a good arrangement, even if the modern cow is a genetic oddity 'created' by Man. We hope to demonstrate that the modern cow is getting an increasingly raw deal.

For a start, the logistics of efficiently machine milking large herds with minimum labour means it is far too much trouble to leave the calf with its mother. So in the vast majority of cases the calf is removed from the cow within a few hours of birth and bucket fed on reconstituted dried milk, enriched with vitamins, and as soon as possible weaned on to solid foods. Bull calves being much easier to handle, the bull calves will be castrated.

Not surprisingly, 'separating the calf from the mother shortly after birth undoubtedly inflicts anguish on both. Cattle are highly intelligent and attachment between the calf and the mother is particularly strong.'ⁱ Cows will cry out and search for their calves for days after separation. The milk in your tea is at the expense of these animals' 'happiness'.

A key point to grasp is that the selling on of surplus cattle from dairy herds for beef

production is integral to the profits of dairying. Beef and dairy industries go hand in glove. By supporting the one we support the other. How does this work? Calves are integral to the profitability of milk production. Calves will be sold on for one of five possible uses: 1) the weakest calves can be slaughtered immediately to provide the softest, whitest veal and finest leather. Rennet, extracted from the dead calves' stomachs, is also an important product; it is used to make many commercial cheeses. 2) Stronger calves can be reared on to a larger size for veal, which commands a high restaurant price. The considerable suffering that veal production inflicts on calves does not make pleasant reading. 3) The best of the heifer calves will replace their mothers as dairy cows; but they are not all needed for this. 4) And exceptional male calves will be reared as bulls to serve as sires generally by proxy to the methods of artificial insemination. 5) The remaining calves, both male and female not used for any of these other purposes, are reared for beef - as much as '80% of beef sold by butchers is a by-product of the dairy industry'ⁱⁱ

"But surely,' some protest, 'a cow has a good enough life?'" 'Normally' a cow, like a horse, would live for about twenty years. And a cow's most productive years as a mother used to be between the ages of four and twelve years. But nowadays most dairy cows are slaughtered by the age of five. Why is this? The heartless logic of farming economics has brought about enormous changes in farming methods in the last forty years. Economics puts very little value on animals' happiness. A farmer aims to make the highest possible profit, and he does this by using each individual cow to the maximum. Quite simply, cows are pushed until their performance

peaks, at which point, since they can be replaced, they are more valuable as a carcass. The stress to which dairy cows are subjected is well documented by Government committees and the scientific communityⁱⁱⁱ 'Mad cow' disease (BSE) is just one abnormality which has arisen from the madness of modern farming's relentless pursuit of profit.

A cow will be put 'into calf' well before she is three years old; three months after calving she will again be 'put to the bull' or artificially inseminated. For nine to ten months of each year she will be milked to capacity by machine at least twice a day. Much of this time she will be both lactating and pregnant - an obvious strain on her constitution. The cow is only 'dried off' in the last two months of her nine months' pregnancy, allowing her some time to gather strength for the birth and to give her calf a better chance of survival. Cows' pregnancies can be further complicated because they are often inseminated with semen from prize beef bulls to maximise the potential for beef. This tends to make for a much heavier pregnancy for the cow, and on occasion an extremely difficult and painful birth. This cycle is repeated each year for the rest of the cow's short life.

Continual milking and the farmer's push for high yields puts considerable stress on the cow. How is this? For a start, cows are bred for increasingly high milk yields. Cows now produce five times as much milk as their grandams in the 1950s. The excessively large size of udders amongst the majority of cows is visual evidence of the unnatural difficulties which this breeding causes. And research experiments with genetic engineering have only just started.

A farmer wants each cow to give as much milk as she can. Removing her calf is the just the first step in achieving this. By milking the cow to capacity, sometimes three times a day, the demand on her body to produce more milk is sustained - to as much as ten times as much as that which her calf would want.

Making all this milk takes a lot of energy. Yet the farmer is happy enough, because by feeding

the cow more she produces yet more milk. The farmer can push the cow's 'productivity' through her feed. But a cow's stomach has evolved to digest grass, and there is only so much grass a cow can digest at a time. So modern dairies supplement the diet of grass, or in winter of hay and silage, with 'concentrates' - these 'high energy' pellets of protein and cereal are fed to cows whilst they are being machine milked. In the most modern milking parlours the cow wears an electronic collar linked to a computer that measures her yield and dispenses her a calculated amount of feed, the expensive cost of the concentrates being balanced against the increase in milk yield they make possible. It was such concentrates, containing bonemeal made from diseased sheep, that caused the recent scare over 'mad cow's disease'. Quickly fermenting concentrates, foreign to the ruminative gut of herbivores, causes digestive acidity. Aside from the debilitating effects of rumen acidosis on the cow's health, acidic slurry, its consequence, contributes significantly to a high percentage of painful lameness amongst cows. Lameness comes from long hours of standing in their own accumulating slurry - a common condition prevailing in the holding yards and sheds, in which the cows are often kept.

Disease is the most obvious consequence of intensive dairy methods, and its common prevalence is evidence enough of the stress to which cows are subjected. Mastitis, a painful hardening and inflaming of the udder, is probably the most common disease to which the strain of continual milking for high yields makes the modern dairy cow most prone. Up to one third of the national herd suffer from this each year. Mastitis is treated, as are other common dairy cow diseases such as milk fever, staggers, liverfluke, lungworm, and pneumonia, with antibiotics. Go into a milking parlour and you will see a whole variety of tubes lying in trays next to the milking machines, waiting to be squeegeed up the cow's teats. Such treatment can be painful, and can damage the cow's teats. There is an ever changing range of increasingly powerful antibiotics as successive bacterial

strains become resistant to particular antibiotics. Although milk which contains antibiotics should be thrown away, and the licensing authorities do regular tests penalising farmers whose milk is not clean, inevitably traces get into the milk. Some authorities believe that one reason why people do not always respond effectively to antibiotics is because they are 'immunised' against them by the regular traces in the milk they consume.

The intensive nature of modern dairying predisposes the cow to disease. But a sick cow is expensive to keep and cure. Often the dictates of Agribusiness means it is more economic to slaughter sick animals. Long gone, certainly in Britain, are the days of the small family dairy herd, where every cow had its name and was carefully looked after. Instead cows are production units, and when they cease to produce the high yields of milk required by rigorous financial criteria they are replaced by younger animals, going for pet food if they are not up to human consumption. Not surprisingly, the life of a dairy cow these days is short and very far short of the rosy picture of children's books. And with the dairy industry being integral to the economics of beef consumption and other products such as leather, gelatin, fertilisers, petfoods and pharmaceuticals, when we eat dairy foods we are directly involved in the production of animals for slaughter.

EGGS

If cattle get a rough deal, then the story for chickens is considerably worse. In the UK unless an egg is specifically sold as 'free range', it comes from one of the approximately thirty million hens in UK battery farms. Ninety percent or more of eggs consumed come from these farms.

Egg production, in a similar fashion to milk production, exploits a natural activity of the animal concerned. Hens lay eggs regardless of whether they have been fertilised or not. However, once a hen has a batch of fertilised eggs, she will cease to lay and concentrate her energies on hatching and looking after her brood. Farming interrupts this natural cycle.

Battery farms are literally hell realms, equal to the inventions of the most sadistic mind. It isn't actually sadism, but simply a total lack of imagination. Here chickens spend their short lives in very crowded cages. The cages are so small that often the birds cannot turn around: it is common for five birds, each with a wingspan of thirty-two inches, to be kept in cages only twenty by twenty inches. Their feet usually become painfully deformed from continuously standing on their cage's sloping wire mesh. In these completely abnormal conditions the birds cannot perch, ground-scratch, dust bathe, preen or nest, all normal activities. Lack of exercise leads to fatty liver disease and brittle bones. Stacked in tiered cages by the hundreds, the hens become psychotic; they are often debeaked so they cannot peck at their neighbours. To sustain maximum egg production and to improve the watery whites and pale yolks typical of battery farm eggs, the hens' feed is chemically enhanced with synthetic hormones. If we buy ordinary eggs in a supermarket, or egg and chips at a service station on our way back from a retreat, we support this battery farming.

But beware feeling secure with the 'free range' label now prominently advertised in 'environmentally aware' stores. All too often 'free

range' means the chickens are kept in the relatively crowded and confined conditions of 'deep litter' or 'straw-yard' pens, which, although better than battery cages, are hardly 'normal' environments, are far from pleasant, and still do not allow the birds the full range of their normal activities.

A simple and yet crucial fact is that for every hen there has been a male chick. If there are thirty million hens in battery farms, there have been as many male chicks to deal with. What does one do with such a large number of cockrels? A considerable logistical question! But one turned to the farmer's financial advantage. It has to be! The price of eggs would be astronomical if all the male chickens were not used for some 'productive' purpose. Whichever way you look at it, the sale of eggs subsidise the sale of chicken meat, and vice-versa. As with the dairy and beef industries, the two go hand in hand. Male chicks are either grown on for broiler meat, or killed as quickly as possible. In battery farms male chicks are often 'recycled', being converted into animal feed. Most chicken-feed will include bonemeal, made from the parts of dead animals not considered suitable for human consumption or pet food. The means of killing male chicks is not regulated. Often they are just piled into dustbins and left to die through smothering.

What if we buy our eggs from a smallholding, like the one in Surlingham village, where we can see the chickens pecking around in the grass? Clearly the hens themselves are leading happy lives. But even here killing is normally integral to the situation. It just isn't practical to have lots of cockrels or old hens running around. And business sense, as in battery farms, demands that a hen be killed and replaced as soon as its egg-laying falls off below an optimum level.

Modern farming is big business. It's a massive industry, and like any other subject to similar financial criteria. To survive in a competitive market farmers employ rigorous business criteria. A farmer, to sustain the standards of living to which he is accustomed, must treat his animals as production units. Unit costs and overheads are kept as low as possible, and yield per production unit maximised to sustain the highest profit. Every aspect of production is priced, and every bit of an animal sold for some purpose. Skins, wool, hair, bone and even offal all have a market value and contribute to the farmer's profits. In this environment there is little room for sentiment. All of this is as true of the dairy and egg industries as it is of the meat industry, the economics of which are entirely interdependent. When we eat eggs and dairy produce, we buy into this world, supporting its heartless mechanisation.

THE ETHICS OF EATING

These then are some of the stark facts of farming life that we should bear in mind, particularly when we are out shopping or in a restaurant. What we eat is an ethical question for each of us. Not only do our actions effect us personally, what we choose to eat also effects the world we live in. If we eat dairy foods and eggs we support the agricultural exploitation of animals and give weight to the belief that such a system is an inevitable necessity for human survival.

As Order members we are committed to living a life of compassionate action - if we are to express this ideal, surely we need to periodically review the thoroughness of our vegetarianism? Do we really practise what we preach - could we not 'walk the talk' just a little more? But whilst many of us may be convinced of the ethical propriety of 'veganism', we may feel unable to embrace its uncompromising rigour, its laudable commitment 'to abstaining from all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose.'^{iv}

So what can we do? Most importantly, we should clarify what our principles commit us to do. But sadly the real questions are usually evaded; all too often the ethical principle is jokingly sidestepped in simplistic black and white terms: 'what about plants! - surely they've got feelings too? I suppose you want me to live off air!' Or we argue that, since it is impossible not to cause some harm to animal life, to draw the line at not eating meat whilst still continuing to eat dairy products and eggs is the most pragmatic, sensible choice.

If we are to really put our principles into action, first of all we need to acknowledge that our choices do have consequences; although the milk in our tea is just a tiny drop in the ocean of milk consumed each day, our drinking it does contribute to the status quo. This is exactly the same choice that we make when we refuse to eat meat. More importantly, when we use an alternative we actively support a positive trend

for change. The FWBO's potential for exerting an influence for positive change is very considerable: thousands of people pass through the doors of our Centres each year being introduced to meditation and the associated ideas of vegetarianism. If we are ourselves clear on how far vegetarianism can be taken, our enthusiasm will be shared.

Secondly, many of us could be much more honest with ourselves as to why we continue to eat eggs and milk and everything that is made with them. It's really very simple: an important reason is that we *like* them. Life is a little brighter with butter, mayonnaise, all those delicious cheeses, a feast of different ice-creams, croissant, cakes, milk in our tea, cream in our coffee and so on. The truth is we're really quite attached to these foods and many of us would prefer not to change what we eat. Perhaps we think we should, or we'd like to in theory, but, in practice, we don't really feel sufficiently strongly enough to make the necessary effort. If we're honest about what's going on, this is a start. But it's much easier to forget the uncomfortable facts about the dairy and poultry industries; the tasty reward of our favourite foods distract us from the pricks of our conscience. If we give way to this, there is a price to pay: we bind ourselves just a little more securely to the Wheel of Samsara, and more importantly fail to act on our aspirations.

Since eating is so fundamental to our lives, it is necessarily part of our Buddhist practice. If we are to rein in neurotic craving and develop contentment in our lives, eating is an important working ground within which to extend our awareness. The Buddha encouraged his disciples to practise careful restraint with food, eating just enough to maintain a healthy body and alert mind. This isn't easy: our modern consumerist society encourages us to be ruled by whim and fancy, promoting indulgence at every turn. Supermarket shelves packed with tempting delights lure us into eating far more than we need to maintain a fit and healthy body.

And in the modern West it is unusual to consider how our eating effects us spiritually. So it is difficult to take our eating habits in hand and really becoming the masters of our appetites. And yet hard as it may be, our eating habits are a paradigm of the effectiveness of our spiritual practice - we can ill afford to ignore this crucial aspect of our life.

As Buddhists, the most important thing is to practise acting with loving kindness as fully as circumstances permit. Any ethical practice is work in progress; we cannot be perfect embodiments of Enlightenment overnight. At the same time we can definitely be progressing in that direction through how we live our lives and the choices we make. With respect to animals this means practising vegetarianism as thoroughly and completely as we honestly can. Becoming a vegan is really not the issue; our fears and the difficulties of immediately doing so can distract us from practising the first precept with increasing effectiveness. Our point is that there are many shades of grey possible; practising vegetarianism cannot be an entirely 'either-or' affair. Whilst we necessarily 'draw lines', it is easy and safe to draw a line much nearer to entire abstinence from use of all animal products than we may think. Even if we can only move toward a completely vegetarian diet step by step over a period of time, this is entirely consistent with Buddhist practice.

For example, we both frankly admit that we do not ourselves follow an absolutely 100% vegetarian diet all of the time, 365 days a year. On occasion, we still have cow's milk in our tea and coffee, eat milk chocolate, and, especially when travelling and visiting family and old friends, eat eggs and cheese. Hence, we cannot call ourselves vegan in the strictly defined sense. In any case, calling ourselves 'vegan' is not important; what is important is that we are genuinely practising the Buddhist path. We are

flexible and pragmatic in our approach, but always concerned to live out the precepts as best we can given our current limitations. And we do seek to go beyond our limits: we are concerned to make our practice of the first precept increasingly effective in every area of life. In terms of vegetarianism, this means remaining aware of the issues and doing what we can to move toward living out an increasingly effective expression of the ideal. As the years go by, we are increasingly eating a more totally vegetarian diet. Our intention in writing this article is to encourage others to continue extending the spirit of the first precept to their eating habits, with an attitude of increasing awareness, care and patient exploration.

The application of the principle of Loving Kindness is very extensive indeed; it is, after all, the foremost expression of the Enlightened Mind in the world. In this article we highlight obvious examples of the milk and egg industries. And yet there are so many other animal-derived products to which we could and should turn our attention if we wish to practise this precept with increasing thoroughness. In many instances, there are complex relationships to be evaluated, and often no obvious clear cut course of action to follow. And since we cannot live without causing some harm to living beings, we can never perfectly express the principle, but we can always strive toward a better expression of it

If this is our motivation, then we will not quibble when we learn of the animal suffering involved in so many products such as leather, wool, silk, gelatin, honey, cosmetics, and many pharmaceutical drugs. We will simply do as much as we can to limit our use of them, and to embody a way of life that fulfils the Buddha's beautiful exhortation: *'Let the sage live in the village as a bee collects honey from the flower without harming colour or fragrance.'*^v

Eating a healthy diet

For many contemplating a completely vegetarian diet, their biggest concern is health. This is natural enough. And yet eating a completely vegetarian diet which is healthy is actually straight-forward and easy. Since this assertion is contrary to many people's expectations, it's often met with skepticism - but we need to examine the assumptions we're making. After all, a wholly vegetarian diet is likely to be a healthy one; it fulfils so many of the guidelines for healthy eating set by medical authorities. Nevertheless you probably need a little more convincing?

Let's get the question of a healthy diet in perspective. We already know that the healthiness of a vegetarian diet using eggs and dairy products has the universal accolade of health authorities. But what if the animal derived products are cut out? Can a diet derived solely from plants be sufficient for good health? So often people immediately assume huge risks are involved; understandable as how we may have come by this view, it just isn't true. Unfortunately, all too often, ensuing discussion descends to 'yes it is' countered by 'no, it isn't!', and everyone remains convinced of their particular view. So what are the facts?

The fact is that nutritional science is very complex; authorities, especially health practitioners of different disciplines, often differ substantially in their recommendations. This is one reason why one 'hears so many different stories'. It really is difficult to know who to rely on. As Mark Twain says, 'There are ... lies, damned lies, and statistics'^{vi}; information can be interpreted so easily to support any particular predisposition. Consequently, it all depends on who you read and listen to. Vegans point to the convincing experiential evidence of three successive generations of healthy vegans, brought up from birth as vegans. Whilst veganism was once thought of as insanity, by 1975 the vegan diet had gained sufficient credibility to be approved even by the U.S.

National Academy of Sciences, an organisation apparently known for conservatism. More recently a well-documented and researched book commissioned by the British Vegan Society surveyed all the major research and concluded that a wholly vegetarian diet 'can provide all the essential nutrients for health and fitness at any age, without the need to take supplements, so long as a few elementary rules are observed.'^{(7)vii} Of course, it would be easy to dismiss this book as partisan. Nevertheless, it convincingly lays to rest a number of conflicting reports about the dangers of a vegan diet, thereby making the prospect of moving towards a healthy, wholly vegetarian diet really very much simpler. According to this apparently reliable in-depth analysis of the available evidence, there are no rational grounds for citing nutrition as reason for not adopting an all vegetarian diet unless you have a specific health problem.

Indeed, an entirely vegetarian diet can be certainly as, or even more, healthy than a lacto-ovo-vegetarian diet. Whilst there are recorded instances of vegans suffering from diseases attributed to their diet, these cases are relatively few and are statistically insignificant compared to the wealth of evidence pointing to the allergies, disorders and diseases exacerbated by the consumption of animal products. For instance, allergy to milk is common, human adults often losing the ability to successfully digest lactose, one of the principal components of milk. Then, animal fat, a major component of whole milk, cheese and eggs, is cited as a major contributory cause of many common fatal diseases such as Coronary Heart Disease, and a substantial number of common cancers, these two being the major 'killers' in contemporary society.^{viii} Depending on the authority, the recommended dietary percentage of fat in our diet is a maximum of 25-35%. Lacto-ovo-vegetarians can easily exceed this. By contrast, there is a statistically significant lower incidence of these diseases among those relying on largely vegetarian diets^{ix}. Entirely vegetarian diets can

also provide the medically recommended high dietary fibre for combating these 'modern' diseases just mentioned, as well as gallstones, haemorrhoids, diabetes and gastrointestinal disorders such as diverticulitis; again, a lacto-ovo-vegetarian diet is less likely to have a high fibre content. Where those on an entirely vegetarian diet encounter nutritional problems, this is due to relying too heavily on just one staple.

The best way to find out about how to eat a healthy, completely vegetarian diet is to talk to those who have already been doing it for some years. Within the FWBO there is substantial experience on which to draw, particularly amongst those who have lived at our Retreat Centres, many of which have been following an all vegetarian diet for many years.

But what's the bottom line, especially for those who want to keep it as easy as possible? It's really a matter of common sense. If all we eat is Mars Bars, chips, Baked Beans on toasted Mother's Pride, and Sugar Puffs with soya-milk, we're not looking after ourselves well, and we're bound to look washed out and pasty, thereby fulfilling the longstanding view of what happens to people who eat vegan food. Wholly vegetarian food can be delicious, rich or simple, and extremely varied. Many great culinary traditions have a wealth of vegan recipes. And the handsome ruggedness of that intrepid Polar expeditionist, Sir Ranulph Fiennes, certainly belies the myth of 'weedy vegans'. So long as the wholly vegetarian diet is varied, being largely based on a variety of wholefoods, fresh fruit and vegetables, drawing from different grains, nuts, seeds and pulses, we will get everything we need for a healthy diet. Highly refined foods that rely on artificial stimulants, white flour, white sugar and salt for their appeal are OK, but only in small doses - we shouldn't live off them. Some care and thought is needed, but it really is quite easy. Like learning anything new, we need to focus our minds on what's involved to start with, but very quickly much of it becomes second nature.

If we are to sustain our new habits, probably the most important thing is that we still enjoy our food. And we certainly can. Necessity is the mother of invention: any of the hundreds of people who have had the pleasure of eating at Padmaloka in the last eight years will know how delicious a completely vegetarian diet can be. There's no need to consign ourselves to an endless round of 'brown rice, old lentils, and soggy veg laced with shoyu' - unless that is what we like. It is easy to learn how to cook in a different way, without relying on milk, cheese, eggs and other dairy products to make our meals tasty. Asking our friends, and looking through some of the large number of excellent recipe books available is a good way to start to develop our culinary skills.

We'll now briefly cover some common concerns: that of sufficient protein, vitamins and minerals.

Protein

Many of us when we become vegetarian can still unconsciously think in terms of the 'meat and two veg' rule, simply substituting a 'vegetarian' alternative for the meat, usually eggs or cheese. We think that these animal derived foods are our principal available sources of protein. This is a gross over-simplification, one of the great modern myths perpetrated by the meat, milk and egg industries for obvious reasons. Alternatively, we may think that vegetable protein equals beans, and since we may find beans difficult to digest, we have no choice but to rely on eggs, milk and cheese. Again this is too simple a view.

The relatively recent concern with protein is perhaps an example of where a little knowledge does more harm than good. For a start many people in the West eat far more protein than they actually need. This is a well-established medical fact. The World Health Organisation (WHO) recommends that only 10% of our food need be protein based. (10)^x Our recommended daily protein requirement is between 50-70 grams a day, depending on whether we are male or female, our body size, how active we are, our metabolism, and which authority is making the recommendation. Lacto-ovo-vegetarians can eat easily eat more than this.

The entirely vegetarian diet can also easily provide our protein requirements How? This is because protein is present in significant amounts in a wide number of vegetarian foods: grains, pulses, nuts, seeds, and to a much lesser extent in vegetables. As long as a wholly vegetarian diet is varied, we can get all the protein that we need.^{xi} This is hardly surprising: the bulk of the world's population cannot afford the daily luxury of animal derived products. The qualification to this is that we also eat sufficient other energy bearing foods i.e. carbohydrates, oils and fats so that the protein we do eat is not broken down to provide energy. Given that we usually eat at least twice a day, and eat a substantial amount,

we're very likely to get sufficient protein on an all vegetarian diet. And this is really all we need to know.

The details are quite a bit more complex. It's up to you whether you really want to go into them. Knowing more detail may make you feel more confident, but it won't necessarily make things clearer. Here we'll summarise some more important considerations.

Different foods have different protein contents; there are hundreds of different types of protein. We can use some proteins much more fully and immediately than others; these tend to be the animal-derived proteins. Protein from eggs and cottage cheese are good examples. Although there is obviously a lot more protein per gram weight in an egg or some cheese than in a mushroom, many people don't realise that nuts and seeds have as much as twice the protein per gram as eggs. Only cheese has a comparable protein component to seeds, nuts and pulses. Surprisingly, grains have a comparable content to eggs, and legumes only twenty-five percent less protein by weight. Soya milk is almost as good a source of protein as milk, having eighty percent of the protein content of milk by weight.

The reason why eggs could still be said to be 'better' sources of protein than these alternatives is because the egg protein is more completely usable. And yet although milk and egg protein are 'better' in this sense, we can still easily get the protein we need from these non-animal sources. We either have to eat proportionately more of them than eggs and milk products to get it, or eat two foods with complementary proteins. We'll explain that now.

Each type of protein is made up of its characteristic combination of different 'building blocks', called amino acids. All together, there are twenty amino acids all of which we need to make up our own body protein and thereby stay healthy. Twelve of these amino acids we can make in our bodies. Since we cannot make the other eight, the 'essential' amino acids, they must be present in our food. Grains and seeds are good sources of protein; but they are

relatively low in two of the 'essential' amino acids - relative in the sense of providing the correct proportions of essential amino acids that we need. Legumes - peas and beans - are also good sources of protein; they too are *relatively* low in two of the 'essential' amino acids, but different ones to grains and seeds. By eating foods from these two different groups we complement each's relative deficiencies, providing all the amino acids we need in the correct proportions to make what is called complete protein. It is in this sense of complete protein that eggs and cheese are better single sources of protein since they each individually provide all the amino acids we need in the right proportions.

Reading this may raise concern in your mind about how to make up balanced meals on a wholly vegetarian diet. You can relax and put aside any worries. Recent research confirms that so long as we eat from two or more complementary plant groups every day, we'll get sufficient protein.^{xii} This is certainly accords with our experience.

Obvious examples of simple meals which supply complete protein based on foods from complementary plant groups are: beans on wholemeal toast; peanut butter or tahini and miso on wholemeal bread; rice and lentils; tortilla and beans; wholemeal pasta with tofu; breakfast cereals and soya-milk; 'vegie' burgers, salad and chips. If you wish to pursue this further, booklets by the Vegan Society are helpful.^{xiii}

Vitamins and Minerals

The explosion in vitamin and mineral supplements on supermarket shelves in recent years shows people's concern that their diet is inadequate. And probably with due cause. Anyone who buys organic produce or grows their own vegetables and fruit knows how much tastier they are than their insipid, watery supermarket counterparts. The economics of Agribusiness are only concerned with what looks good, rather than inherent food quality.

Regardless of what we eat, whether meat, eggs, milk or not, we may well need some form of supplement; how crucial this may be will depend on how balanced our diet is, the quality of the foods we eat, and whether we suffer from any illnesses.

Nevertheless, as with protein, if our completely vegetarian diet is varied and made up of fresh organic foods in particular, then our needs will usually be met. In fact, through relying on a varied diet, we are much more likely to get what we need than if we stay heavily dependent on eggs, milk, cheese and so on, or eating substantial quantities of highly processed foods such as from 'fast-food' outlets. For those who want to follow this up, there is very adequate scientific research, and several decades of healthy vegan lifestyle to back up this general conclusion.

Of the twelve essential vitamins and sixteen essential minerals, people usually seem most concerned about calcium, iron and Vitamin B12. Zinc can also be a concern for those on low calorie diets. Here we will briefly summarise the general conclusions of scientific research for the these three.

Dental decay and the high incidence of osteoporosis in the general population rightly makes people concerned about calcium. Will an all vegetarian diet provide sufficient calcium? Reports of calcium deficiency in adult vegans are no more common than in omnivores and evidence suggests that vegans may have a lower calcium requirement due to the nature of their diet. The factors effecting calcium absorption and excretion are many and complex e.g. the protein, phosphorous, phytate, fibre, sodium and oxalate contents of our diet. Vitamin D is also needed - something vegetarians living in the grey 'northern' climates should consider. Osteoporosis has been connected to eating more protein, particularly animal protein, than we need. The reason is this. The high blood acidity which comes from eating excess protein is corrected by calcium being excreted from our bones into the blood. Furthermore, the mineral

phosphorous in the blood inhibits calcium absorption; the more phosphorous we eat the less calcium we can absorb. Since animal proteins are high in phosphorous, the more animal derived protein in our diet, the less calcium we can absorb, regardless of how rich in calcium the foods we eat are. Whilst milk is rich in calcium, it also has a high animal protein and phosphorous content. For these reasons drinking milk, according to some authorities, does little to help calcium absorption and can make the situation worse leaving us with a negative calcium balance.^{xiv} This views contrasts strongly with the common perception, encouraged by advertising, that milk is essential to good health.

Whilst other authorities^{xv} are less dramatic in their diagnosis, the fact remains that some vegetarian foods are good sources of absorbable calcium, as least as good as milk. These include soya milk, tofu, cooked dried beans, soy products, tahini, sunflower seeds, most nuts, kale, Green & Chinese cabbage, turnip & mustard greens, broccoli, watercress, dried figs and currants, black molasses and edible sea weeds. Drinking hard water can provide a considerable intake of calcium.^{xvi}

Anaemia makes people think of mineral Iron. Some years ago there was concern that a higher percentage of phytates and fibre in vegan diets inhibited the absorption of mineral Iron. High tannin intake, associated with tea drinking, also inhibits absorption. Nevertheless research reveals that vegans are no more likely to be iron deficient than omnivores.^{xvii} A completely vegetarian diet usually meets the recommended daily allowance, with absorption being enhanced by the high Vitamin C levels usual in these diets. Children, pregnant women, and those losing blood, e.g. menstruating women, those with ulcers, will have a higher requirement. Iron is available from many plant sources. Dried fruits, bran, whole grains, soya flour, nuts, seeds including tahini, pulses, green leafy vegetables, watercress, molasses, and edible seaweeds are

good sources of iron. By contrast, dairy products are very low in mineral iron.^{xviii}

Anyone eating a fully vegetarian diet should ensure that they eat vitamin B12. It only takes a minute amount of B12 to maintain good health, but it is essential to our long-term vitality. The apparent difficulty is that B12 is found only to a limited extent in wholly vegetarian foods. Given our need for B12, it is important to eat B12 fortified foods or take supplements. This is easily done. For example, B12 is invariably included in most vitamin supplements, which many people choose to take anyway. B12 is added to many vegetarian foods such as some breakfast cereals, yeast extracts, savoury spreads, Vecon, some margarines, TVPs and a number of soya milks and similar products. It is also present naturally in dried nutritional yeast (not Brewers or baking yeast). We should note that whilst present in seitan, tempeh, dried seaweeds, and spirulina, B12 from these sources is not biologically active in humans. And although there is evidence to suggest that some people extract B12 from bacterial activity in their intestine, it would be unwise to rely on this.

Getting regular B12 is important. And yet for adults, particularly those who have converted to vegetarianism, an important point is that we are not going to 'fall over' if we miss out for a few days. Since it takes a long time to deplete the B12 stored in our livers, the negative effects of Vitamin B12 deficiency take a number of years to manifest. Obviously, this is no reason to be cavalier - we should be mindful of our need for this vitamin and ensure that it is regular component in our diet. In particular children, pregnant or nursing mothers need to pay special attention to regular B12 intake. Also it is important to note that B12 can be inactivated by regular large doses of Vitamin C, e.g. 1 gram a day^{xix}. But surely we cannot cite our need for care as sufficient reason for continuing to eat eggs and dairy products?

Conclusion

Vegetarianism is a practical expression of our commitment to the first Precept and yet total vegetarianism is something few of us can immediately adopt. Nevertheless to move towards a completely vegetarian way of life by degrees, testing out each stage for ourselves, is entirely consistent with Buddhist ethical practice. We hope you will continue to do this, and from time to time review the consequences of the way you use animal derived products, for yourself, the Movement and the animals involved.

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We wish to thank Dharmacharini Varasuri,
(Jean Peitarinen MSc, R.D) a Registered
Dietician for her invaluable advice.

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