So you're a vegan ... but are you, really?

The number of animals that die each and every day to produce vegan food is astonishing.

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here's a lot to be said for veganism. For the thinking eater, it gets around a whole bunch of ethical grey areas. If you care about what you put in your mouth, it is probably the most black and white way to approach the whole meat thing. There are no grey areas about so-called "ethical" meat, or questions over exactly how "free range" are the hens when there are 10,000 chickens to the hectare. Not eating meat, not buying products that come from animals — surely that means you're doing better not only for those animals directly affected, but also the environment, and your health? But while veganism is on the rise in Western nations, it's still far from mainstream. Why, then, is it so hard to convince people of its worth if it really is a win all round? The vegan philosophy is, at its heart, quite often about reducing suffering. By not eating animals, you — by definition — reduce suffering. It's a lovely idea. And I wish it were that simple.

Let's start with peas. Collydean (not its real name, but a real farm) is a 2700ha mixed farm in northern Tasmania. They grow beef cattle, some sheep, do agroforestry, have barley and some years grow peas. A *lot* of peas: about 400 tonnes a season. And to protect the peas, they have some wildlife fences, but also have to shoot a *lot* of animals. When I was there, they had a licence to kill about 150 deer.

They routinely kill about 800-1000 possums and 500 wallabies every year, along with a few ducks. (To its credit, Collydean only invites hunters onto its farm who will use the animals they kill — for human food, or for pet food — and not leave them in the paddock, as most animals killed for crop protection are.) So, more than 1500 animals die each year to grow about 75ha of peas for our freezers. That's not 1500 rodents, which also die, and which some may see as collateral damage. That's mostly warm-blooded animals of the cute kind, with a few birds thrown in.

Collydean's owners assure me it wouldn't befinancially viable for them to grow peas without killing animals. Which means that every time we eat peas, farmers have controlled the "pest" species on our behalf, and animals have died in our name.

The number of animals that die to produce vegan food is astonishing. Consider wheat, a common crop in Australia. And let's look at the nutrient density of the food in question, because not all foods are created equal. According to an article by Mike Archer, Professor in the Faculty of Science at the University of NSW, roughly 25 times more sentient beings die to produce a kilo of protein from wheat than a kilo of protein from beef. Thanks to monocultures, mice plagues and our modern farming systems, a hell of a lot of small animals die to produce wheat. Yes, most of them are rodents, but surely in the vegan world all warm-blooded life should be honoured equally?

On average, 1 billion mice are poisoned every year in Western Australia alone. According to a 2005 Senate report, if we didn't kill mice the cost of food would rise drastically; even with heavy baiting programs, mice cost the Australian economy about a \$36 million a year.

Let's look at birds. Over a five-year period up to 2013, rice farmers in NSW killed nearly 200,000 native ducks to protect their fields. That's right, to grow rice. That's in addition to the animals indirectly affected, such as those that once thrived in the waterways drained by such a heavily irrigated crop on a dry continent. That's how farming works. To grow something, other things are affected. Sometimes it's an animal, sometimes it's a helluva lot of animals. The most animals that die on Fat Pig Farm, our property in the Huon Valley south of Hobart, are the snails and slugs that would destroy our garden if left unchecked. We kill close to 5000 moths, slugs and snails each year to grow vegetables, and thousands and thousands of aphids.

Insects bear the brunt of all annual vegetable production. And the most exploited insect of all is the European honeybee. True vegans don't eat honey because it's the result of the domestication, and utilisation, of the European honeybee. They don't eat it because eating honey is "stealing" honey from the hive, and because bees die in the process of beekeepers managing the hives and extracting the honey. And they're right, bees do die in that process. Problem is, honeybees are very, very good pollinators, and a whole heap of crops are pretty much reliant on these bees to produce fruit — and even more crops would suffer from far lower production due to poor fertility if we didn't have bees. About one-third of all crops globally benefit from direct interaction with pollinators, of which European honeybees are by far the most efficient. Whether we eat honey or not, we are the beneficiaries of the work of the domesticated European honeybee. In their absence, some crops would come close to failure, and others increase substantially in cost. Gobs of bees die every year doing the work of pollination for us. According to Scientific American, up to 80 billion domestic honeybees are estimated to have a hand in the Californian almond industry each year, up to half of which die during the management process and the long journeys to and from the large almond orchards. And that's the carnage from just one crop.

What about vegan wine, you say? It doesn't use fish bladders, or milk extracts, or egg as a fining agent (ingredients used to clarify many wines, beers and ciders). But don't forget the harvest. Come with me to watch grapes being picked, watch as huge tubs of plump grapes are tipped into the crusher along with mice, spiders, lizards, snakes and frogs. Sadly, vegan wine is a furphy.

Let's move on to peanut butter, that wonderful practical protein staple. Do you know how many parts of an insect are in each jar? According to *Scientific American*, each of us eats about 0.5-lkg of flies, maggots and other bugs a year, hidden in the chocolate we eat, the grains we consume, the peanut butter we spread on toast. According to US regulations (which are easier to access than Australian data), 125g of pasta (a single portion) may contain an average of 125 insect fragments or more, and a cup of raisins can have a maximum of 33 fruit fly eggs. A kilogram of flour probably has 15g of animal product in it, from rodent excreta to weevils to cockroach legs.

I don't bring this up for the "ick" factor, but simply to show the true impact and cost of food production. When you eat, you're never truly vegan. When humans grow and process food, any food, other things die — and often we eat them.

It does seem that food production gets unfairly singled out for killing animals, when every human activity has an effect on other living things. We kill animals when we drive. We kill animals when we fly, or transport goods by plane. We kill when we build railway tracks, when we farm grain, grow apples and mine sand. We alter ecosystems when we put up new housing developments, build bicycle factories and ship lentils. We push native animals out of their environments all the time, with the resultant pain and suffering you'd expect.

Perhaps, for those not interested in eating meat, or who choose not to eat meat, it's about context. All the creatures killed in the raising of crops — the rodents, the insects, the birds — are just collateral damage. This line of thinking is based on the fact that meat eaters (or their agents, the farmers, slaughtermen, butchers and chefs) "choose" a victim, so this is different to an animal dying as a result of random chance. But a death is a death. Suffering is suffering, regardless of whether a human was involved, directly or not. *All* impacts of our actions need to be considered. And this I think goes to the heart of the matter.

What actions produce the least suffering? Some commentators believe that annual crops produce more suffering for more animals. The view is that life is life, that life begets life, and to live we must consume something that has lived, with impacts on other forms of life well beyond our circle of thinking. You eat a plant, and that affects an animal — one that was going to eat that plant (say a nut from a tree in the wild), one that dies because it was going to eat that plant (perhaps grasshoppers or caterpillars on farm crops), or one that might've lived in the wild if we didn't farm that plant at all.

Killing an animal for food or fibre is a small effect. Bigger is the ecological footprint of livestock on the land. Bigger still, and more destructive, is the growing of plants for food, thanks to topsoil loss, the legions of animals killed to maintain monocultures, and the use of artificial fertilisers and chemicals available to the modern farmer. All of us, vegans and omnivores, are the beneficiaries of the fertiliser and compost that come from either animal waste or fossil fuels. Organic farmers use compost made from animal by-products, whereas conventional farmers use nitrogen fertilisers, which are produced using large amounts of fossil fuels. About 2-3 per cent of the fossil fuels burned each year is for making nitrogen fertilisers — accounting for roughly 3 per cent of the world's carbon emissions, including emissions from nitrogen released to the atmosphere. And then there's the

global transport system, which uses fossil fuels to ship your Brazilian soy beans and Californian almonds across the world.

If you don't use fertilisers made from fossil fuels, you need animal by-products. There's barely an organic fruit and vegetable farmer out there who doesn't use some kind of animal by-product (manure, blood and bone) or the compost that contains it. And there's barely a farm that isn't reliant on gas and oil to make the fertiliser, run the tractors and ship the goods. Most estimates put it that the amount of fossil fuel needed to grow a calorie of food and get it to the table is 10 times more than the food calorie itself. It's a negative-sum game. Grains and monoculture crops are worst among them — whereas grass-reared animals, killed and sold locally, are among the more efficient producers of food energy for fossil fuel use.

Take away the use of animal waste in the farming system and things will swing further to one side. If you want truly vegan agriculture, you're going to have more fossil fuel emissions and in the process end up with more expensive food, poorer pollination and reduced variety thanks to the removal of domesticated bees.

I have been fortunate enough to be on all sides of this debate. I've experimented with vegetarianism. I've thought about becoming vegan. I've been to intensive chicken and pig farms. I've "smelt money" and seen despair. I've also raised animals, killed animals (wild and domesticated) and cooked animals. What I've found is that the animal world isn't isolated from the world of plants, and the place for nuanced, sensible debate about meat consumption should sit firmly with all, including with the omnivores of this world — a debate in which condemnation, aggression and intolerance should play no part.

Vegans are welcome to voice their opinion that raising and eating meat has consequences. Indeed, some of those consequences, from the personal to the animal to the environment, are worth serious thinking about. It's quite possible that eating less meat might mean less suffering. But don't be fooled into thinking that being vegan hurts no animal.

Edited extract from On Eating Meat by Matthew Evans (Murdoch Books, \$32.99), out Monday.