



Farming, Sustainability and Science

Continuing the biodiversity articles by Jeanie Clark

Farming: how important is it to your life? Do your children know about sources of foods beyond the fridge, pantry and supermarkets? Do they know what is needed for food to be produced? Have they tried growing some themselves? Where does farming fit into home education? Our family live on a farm, so that might give me a particular bias, but as 2012 is the Australian Year of the Farmer (AYoF), this is really a topic for all.

Telling our stories

One of our reasons for choosing home education over a decade ago was to be able to give our son farm experiences as part of his education. Despite the fact that we live in rural Victoria, there is almost no inclusion of farming in the VELS (Victorian Essential Learning Standards) curriculum. So farm kids typically have no validation of their background in their schooling. This was brought home to me a few years ago when a friend confided that it had not been until her third child was in Year 10 that any school assignment had come home that could use their experience on the farm, yet she had observed how our family used farming for learning from the start.

Whatever your living experiences are, your children can grow in literacy, numeracy, sciences, humanities and the arts if you use your living experiences in their education. I had noticed the lack of real stories about sheep so had already begun making farm story books before we started home education. This just continued into my son's primary years' education.

We have had lots of material. One winter afternoon we took out seats to watch the whole process of a lamb being born. Special-needs lambs are reared in the kitchen and

bottle-fed. One day, we followed the sheep to see them sold at market as prime lamb. My husband took over from me for 'showing the sheep' and following how sheep become meat. We all greatly appreciate the fact that we know what the meat we eat has eaten, and how well it has been cared for when growing.

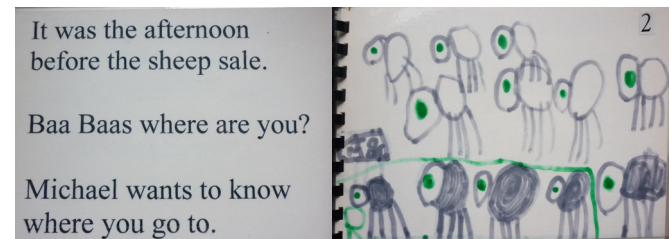
Farming has fitted well into our education. What values could it hold for other home educators? Consider these AYoF objectives for a start:

- Celebrating the broad range and fine quality of food and fibre that farmers grow
- Encouraging people to reflect on the origins of the food they eat.

(The full list is at <http://www.yearofthefarmer.com.au/about/objectives.html>.)

Science

Think about eating: there is a huge variety of farmed foods to explore. It can be a practical or theoretical study. Farming easily involves children in real science. There is much to observe and record – the basic scientific skills.



We have done a lot of observing, and made books about many of the things we did. It was fun to have my son directing and dictating the text and creating the illustrations for his books. His drawings are also useful for another reason: they help us to identify what has been learned and what may still need to be taught. Did you notice anything missing from the five-year-old's drawings of the sheep above? Ears. The drawing showed that he did not really notice them yet.

If you live in Melbourne and want to experience farm animals, where can you go? One place we have enjoyed visiting is the Collingwood Children's Farm (www.farm.org.au). The animals are used to visitors there, so you can get really close to them.

What about early reader texts? Try local public libraries which have books from across the state. There are some good series around. Susan Jackson, who lives on a farm and has a primary teaching background, has written a series of early science readers published by Avalon Books in 1999. They have a single sentence for each photograph in an A5 format. Each book in the series is about a single farming topic; e.g. *Lambing Time* and *Canola*.

Have you ever thought about the science that you teach through stories? A lot of early readers do have farm animals in them. For example, one of our favourite toddler books was *Who Goes Moo?* In words, it teaches the sounds that farm animals make. The drawings require children to match farm animal faces with body drawings. In doing so, the children notice shape, size, colour, and body features – science observations. From the whole bodies, they notice four feet (quadrupeds), two feet (bipeds), and tails or horns.

As you read these books with your children, you help them explore science. For a farm animal picture story book, the table in *Enviroed4all* (<http://enviroed4all.com.au/learning-references-and-activities/finding-science-in-stories/>) shows how to check it for science content. Any gaps in the book's illustrations and text will show up. These

Milk Time for Dorphan



can be supplemented from other sources. The table can also be adapted for other topics.



Moving up to secondary level, we discovered that the curriculum in New South Wales had farming as a subject, and so there were text books for the secondary years. I looked at a couple, and this one impressed me most: *Dynamic Agriculture Years 7-10* 3rd edition by Lisle Brown, Robert Hindmarsh and Ross McGregor, published by McGraw Hill in 2005. It has a clear layout, many activities, and references to the web that are easy to update. It covers history, geography, economics, biology and specific produce. Each chapter

has a glossary of vocabulary, study materials, things to do, things to find out, extension activities (e.g. a soil report, shown at left) and review questions.

Online resources

The AYof website has teaching resources under the education tab. There are many resources on this website to explore for each state. Primezone comes up under a couple of the tabs. This website is a listing of many sites with a primary industry focus that you might like to explore. One is a 'school resources' tab, which is very usable as its links are organised under two-year age groups.

Observing, surveying, experimenting and preserving samples are four different types of science projects presented in the 2012 Hermitage Research Facility Schools Plant Science 'What makes a weed a weed?' Competition. Records are kept via a journal and specific format reports. The competition includes detailed instructions, references and key questions for each year level, which are worth considering as weed resources. The Queensland Department of Employment, Economic Development and Innovation has provided a PDF: http://www.dpi.qld.gov.au/documents/PlantIndustries_FieldCropsAndPasture/Instructions-2012-comp.pdf.

Using our environment, I have just started to make a website about the biodiversity on our home farmland, a sheep farm on the Wimmera plains. My aim is to write it as an educational resource which will grow over the year. I

United Nations Decade on Biodiversity

Strategic Goal B:
Reduce the direct pressures on biodiversity and promote sustainable use

Target 7
 By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
 (reference: www.cbd.int/sp/targets)

hope you will find it useful for your children. It's at <http://enviroed4all.com.au/biodiversity-on-our-farm/>. I would love feedback if you visit it.

Sustainability

How in tune is farming with 'living in harmony with nature'? (Recall this slogan of the United Nations Decade on Biodiversity (UNDB) 2011-2020?) In the biodiversity article in last quarter's *Otherways*, we explored some ideas for the first of the UNDB's strategic goals: raising awareness of biodiversity. The goal of sustainable agriculture is specified in Target 7 under Goal B (see box below).

'Sustainability' is a bit of a buzz word. The concept is also embraced by the AYof in this objective:

- *Promote the role our farmers play as environmental managers, creating and delivering sustainability through best practice management.*

As with so many statements about sustainability, the term is undefined. So how would you define 'sustainability'? From where would you get a definition? It's a big compound word, so break it into its parts ('sustain' + 'ability'). Our 'big' dictionary was published in 1992; it includes 'sustain' but not 'sustainability'. Our 'school' dictionary, published in 2003, has 'sustainable'. If we bought a more recent edition, I would expect it to have 'sustainability', as that word is more common now. However, I didn't buy another dictionary. Instead, I Googled it for a meaning relevant to agriculture. There are a lot of definitions of 'sustainable agriculture'. To convey the scope, I have put a selection of these here: <http://enviroed4all.com.au/learning-references-and-activities/whats-sustainability-in-farming/>.

Actions

Whether you live on a farm or have a garden in the backyard, you can contribute to the UNDB and to the AYof by growing some of your own food. Much of the way farms and home gardens work is sustainable, but there is always room for improvement. So look at your situation and how things could be done to increase efficiency and biodiversity.

What about weeding? In my previous *Otherways* article, I focused on the threat of pests (creatures or plants). This is another link between the UNDB and the AYof. Getting rid of pests supports sustainability, as it protects native species and gets the most efficient use out of inputs for crops or stock.

Doing something about weeds is easier than dealing with feral animals. How does learning about weeds contribute to agriculture, biodiversity and sustainability? Weeds take up valuable water and nutrients in the soil and prevent crops from growing. To grow food sustainably, we need land dedicated to farming to be worked for food, not weeds. In remnant vegetation and reserves, weeds are not native plants, so they deny moisture and nutrients to the plants we want to keep there.

There is much more that can be done under the banner of farming, but if your home education this year includes some learning about farming, growing food and knocking off weeds, you will be supporting some of the aims of both the AYof and the UNDB. And it's great to know the source of your food.

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 (Jeanie Clark is a proud supporter of the AYof.)