

Invention of Man's Best Friend and Best Food

By Evelyne Cadorel-Parker

Durham College, Canada

Since the dawn of humanity, we have managed to manipulate our surroundings using our large, evolved brains. One of our biggest achievements was discovering that we could influence the genetics of certain things to suit our growing needs. Right now we are able to change the genetic coding of our fruits and vegetables to make larger crops that have a longer shelf life; and we have also found away to copy the genetics of one animal and grow an identical copy of that animal which could later speed up food production or have health benefits for people who are gravely injured. None of this would have occurred without our ancestors discovering that certain grains grow into something edible when planted a certain way, and that it is possible to live harmoniously with the large furry creatures of the woods.

In the beginning we had no idea of the kind of power we held in our hands when we began selectively planting crops to fit our needs, or how we would begin to change the core of certain animals who proved to be useful to us. Through a change in delicate genetic coding, human beings have been able to manipulate genes for tens of thousands of years.

To understand how we've been able to change certain forms of life, we must start with a basic understanding of what genetic modification and engineering is:

"Genetic Engineering is the artificial manipulation, modification, and recombination of DNA or other nucleic molecules in order to modify an organism or population of organisms" - Encyclopedia Britannica (2014).

DNA is the core of genetics and is existent in all organisms on Earth and is the carrier of all genetic formation. It decides eye colour, hair colour, tone of voice, and even personality or personal preferences. In plants, DNA decides shape, colour, flavour, and growth. We may not have understood what genes were at the time of agriculture's first appearance or when our dear canine friends began to show true change, but we did understand how to influence these traits through selective planting and breeding.

The history of agriculture differs in date depending on the region. Some findings suggest that fig trees were being planted in the Jordan valley some 11,300 years ago, according to the Genographic Project of National Geographic magazine (no author listed, 2014). More impressive than the beginnings of fig planting is the growth of corn. About 10,000 years ago, native Mexican farmers found that certain

plants grow larger than others and produce a more desirable taste than other plants. They then decided to keep seeds from these larger better tasting plants and use them when the season is right. Through this process, which took a decade or two to fully complete, they transformed the small tough seed of the teosinte plant to an all new plant with large squishy kernels perfect for eating and impossible to find fully developed in the wild. This was the beginning of maize and agriculture in North America. After this discovery was made, it must have seemed easy for our early ancestors to influence many different crops, including wheat, and barley (University of Utah, Health Sciences, 2014). Thus the dawn of food production and modification began and we haven't looked back since.

Long before we even thought about grains, we thought about animals and how we might be able to live amongst them with a mutual respect. It was recently found that the earliest form of domesticated dogs existed in Europe around 18,800 to 32,100 years ago, according to Elizabeth Landau for CNN (Nov.14, 2013). During that time the common wolf knew not to get too close to early humans because of the fire and weapons they had and would instead wait to the side for a weaker human to pass by that they could pick off in a pack. This behaviour was slowly weaned out when more curious wolves attempted to scavenge the scraps that humans left behind, and the humans of the time didn't

seem to mind this act. Over time, the wolves who continued this routine lived longer, were able to eat more often, and even kept warm by the dying embers that the humans left in their campfires. This practice seemed to have benefits for the people too: these well mannered wolves kept other carnivores away, worked as an alarm system if danger was nearby, and even proved to be of good comfort and companionship. So the humans kept the well behaved canines around, and got rid of the ones who they weren't able to train. Much like agriculture, this idea spread throughout the world, leading to different breeds of canines in all countries. Dogs truly are man's best friend, a friend that we created for ourselves.

Human beings have been and always will be a curious species. We will always search for new ways to improve our lives through invention, and it is my belief that we should never forget the beginnings of our creativity and ability to influence nature. Our influence on plants and animals has left a permanent mark and led us to incredible scientific feats. Over thousands of years, human beings have had many needs which have shifted with each generation and pushed the most intelligent of us to find ways to suit those needs, and genetic manipulation is by far our greatest discovery and achievement. In a way, it has allowed us to create a different and more quick evolution for selected plants and animals.

Sources

Encyclopedia Britannica, 2014.

<http://www.britannica.com/EBchecked/topic/228897/genetic-engineering>

No Author Listed, National Geographic, 2014.

<https://genographic.nationalgeographic.com/development-of-agriculture/>

No Author Listed, University of Utah, Health Sciences, 2014.

<http://learn.genetics.utah.edu/content/selection/corn/>

Elizabeth Landau, CNN, Nov.14 2013.

<http://www.cnn.com/2013/11/14/health/dogs-domesticated-europe/>