The Commercial Farmers Union of Zimbabwe

AgriZim

Published 12 times a year by the Commercial Farmers Union of Zimbabwe.

The Commercial Farmers Union is proud to announce the launch of AgriZim - the monthly farming magazine. As the publication develops over the coming months, we hope to create a useful and informative magazine packed with farming-related articles to keep producers right up to date with the latest developments in the industry. We aim to deliver quality advertising exposure to the commercial agricultural sector in Zimbabwe.

We look forward to receiving your support.

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Membership per annum is US$1,200 for anyone still farming, US$150 if you are no longer farming, and US$20 if you are no longer farming and are over 70 years of age.

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QUOTE, UNQUOTE...
"Farming looks mighty easy when your plow is a pencil and you're a thousand miles from the corn field."
- Dwight D Eisenhower

AgriZim

VOLUME 1 NUMBER 4 - NOVEMBER 2010

IN THIS ISSUE

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Foreword

Message From The Vice President

I had already completed a foreword for this month's magazine based on cropping finance tenure and compensation issues, when the tragic events in Chegutu occurred in the early hours of 26 October, resulting in the tragic death of the highly respected tobacco farmer and former ZTA tobacco President, Kobus Joubert and the assault of his wife Mariana. What happened in Chegutu is a symptom of the collapse of the rule of law in this country. These acts are not what normal Zimbabweans are about. This behaviour, and extreme acts of violence, have been overlooked and in many cases encouraged over the last ten years, and it is high time that the perpetrators of such crimes are dealt with as per the laws of this country. Failure to do so will result in the continued deterioration within civil society, the way of so many other African countries. I urge all farmers to remain vigilant and mitigate risk wherever possible. It appears that we as a country are now moving again into the next round of political manoeuvring and, as recent history has shown us, whenever this starts, our sector becomes the target, so please bear this in mind and protect yourselves and your workers at all times.

We as a Union will continue to do everything within our power to protect the lives and rights of our members and we urge the government to cease this selective targeting and treat us as equal citizens of this country.

Across the farming sector we see intimidations and evictions on the rise, with many of the evictions taking place being contrary to valid High Court Orders, making these perpetrators above the law. Every time incidents such as these occur, investor confidence into the next agricultural season is further damaged and the question that needs to be asked is under these conditions how can there ever be real agricultural recovery. Let's get this right, deal with the issues facing our sector in a confident composed manner and in doing so finally create a future for all.

Until next month, please stay safe.

Charles Taffs
Vice President - Commercial Farmers Union

By Maxwell Mutema

Institutional Reaction to Replacement of Freehold Title to Commercial Farmland in Zimbabwe by a 99 Year Lease - Part Two

Real Estate Professionals

Real estate professionals agreed that Amendment 17 invalidated the 99-year lease, rendering it useless for the purposes of collateral. They also raised major concerns about the valuation challenges posed by the lease in its current form.

In terms of the lease, only those improvements already "purchased" or "erected" by the potential borrower can be used as collateral, and those can be valued only on the basis of gross replacement cost (GRC) or depreciated replacement cost (DRC). They cannot be valued on the basis of open-market value, because that would assume you can sell farm buildings and structures independently of the land on which they sit - notwithstanding the absence of title deeds, survey diagrams and the difficulties associated with 'transferring' unregistered and undefined fixed assets. While a valuer can easily calculate the GRC and DRC for a building and other farm improvements, the figures arrived at will not reflect true values, since farm buildings and improvements only become valuable if and when their use is linked to farming operations.

Real estate professionals did not see the point of abandoning a tried-and-tested system that was the envy of the rest of Africa in favour of a system that saps the confidence of investors in commercial agriculture and security of property rights in the country in general. In their view, a workable 99-year leasehold system would include, among other things:

° plans of all acquired farms, sent to the Department of the Surveyor General

° subdivision surveys done in terms of Land Survey Act

° subdivision diagrams lodged with DSG for examination and approval

° lease processing by a conveyancer using approved diagrams.

Banks

The banks concurred with real estate and legal professionals

in disapproving of the lease, perceiving it as severely compromised and unable to offer any guarantees that their funds would be recoverable in the event of a client defaulting. While most banks seem to make a pretence of going along with the new lease in public, in reality they do not, and most banks are not lending against it. Instead, they are assessing credit facilities for farmers, not on the basis of any form of farm collateral, but on the basis of the farmer's track record, the viability of the project and cash flow. In fact, the leases are known in financial circles as '90-day' leases because the state can terminate the lease simply by serving 90 days' notice on the lessee.

Overall, the combined responses of lawyers, bankers and real estate professionals amount to complete disapproval and rejection of the leases. With so much resistance from key institutions and key stakeholders, the 99-year lease is likely to remain where it is: in limbo. Even if the authorities tried to forge ahead, it would be very difficult, if not impossible, to implement the lease system and it would do nothing to promote the recovery of the agricultural sector in the long term.

Advent of Government of National Unity (GNU)

It is still to be seen how the newly-formed government of national unity shall proceed on the issue of land reform. A land policy that is pro-market and promotes and protects individual private ownership of commercial farmland is a prerequisite for the re-establishment of a successful commercial agriculture sector in Zimbabwe.

If the new unity government wishes to herald a new economic era for Zimbabwe, it should move away from central-planned economy tendencies of the past 28 years to more pro-market and investor-friendly policies in line with global trends.

The move to scrap farm title deeds is one of the flawed policy decisions that any new government must reverse to restore confidence in commercial agriculture and ensure a quick recovery of the agricultural sector and the economy in general.

Conclusion and Recommendations

While this might not be a conclusive study, it provides policymakers with a good indicator of the direction they should take. Recognition of tenure rights, no matter how they are registered, must be corroborated by a reliable survey - a comprehensive, coherent legal instrument that provides security of tenure and gives farmers the ability to buy and sell land without state interference. Independence of control and the ability to defend and enforce occupiers' land rights are essential elements of tenure security.

There is an urgent need to address financial institutions' concerns to ensure that the government's preferred tenure system supports investment in commercial agriculture. Mechanisms are needed to guarantee the right to foreclose on property in case of default.

From the issues and concerns raised in this survey, some of the measures that might gain the support of institutions and stakeholders include:

1. A transparent and properly executed survey process, taking its cue from the country's established statutes and guidelines regulating the issuing of freehold title deed and existing lease arrangements based on the freehold title deed.

2. Allocating more resources to institutions responsible for processing the leases, including recruitment and retention of competent professionals (land surveyors and cartographers, among others).

3. Getting rid of favouritism and corrupt tendencies (real and perceived) in the lease issuing process, to gain the confidence and support of institutions and stakeholders. Their support is vital for its acceptance and validity.

It would be a pity if the issue of whether the country should go the 99-year lease route or revert to freehold title deed for all commercial farmland is not put on the agenda of the current new constitution-making process and the subsequent referendum. This is a critical matter for the future of the country and should not be left to politicians to decide alone without adequate public debate. One wonders about the logic behind wildcat attempts to abolish the freehold title deed system on all commercial farmland and replace it with a 99-year lease system. Where is the thinking (reasoning) that indigenous farmers would prefer 99-year leases to freehold title deeds on their newly acquired land coming from?

One final point needs making. Freehold title is not the panacea for all the agricultural productivity challenges in Zimbabwe and the rest of the developing world. As Maxwell Mutema says, "there are a range of views regarding the pros and cons of formal titling versus non-titling forms of land tenure". However, in this particular case, the freehold title deed system is overwhelmingly preferred by the stakeholders interviewed.

This case just re-emphasises the need for objectivity and openness when it comes to policy initiatives aimed at creating a suitable tenure system for any given scenario. In countries like Zimbabwe, where once almost 40% of the total land fell under a formal cadastral system and there was a great awareness and appreciation of the freehold title deed system. Policy should help preserve and expand these strengths.

ABOUT THE AUTHOR

Maxwell Mutema is a land and property consultant. He holds an MBA in Real Estate and a PhD in Land Management, both from The University of Reading in the UK. In addition he has a Master in Business Administration in Agriculture and the Food Industries from The Royal Agricultural College, Cirencester (UK). His first degree is a BSc Agriculture Honours Degree from the University of Zimbabwe plus a Diploma in Agriculture from Chibero College of Agriculture.

FOOT NOTE

Although this study was made possible through a RICS Education Trust Study Grant the views expressed in this article are Maxwell's.

Safer roads mean LOWER TAXES

Our minister of finance announced recently that Zim will only allow the import of second-hand vehicles if they are a max of 5 yrs old and under. This law is being introduced due to the fact that the vehicle fleet in this country is too old and is a major cause of the carnage on our roads at present.

It is well-known that road accidents cost the Zimbabwean taxpayers millions of dollars each year. If the national road accident rates could be reduced, the resultant savings could be passed onto taxpayers. The direct cost of road accidents in Zimbabwe is only the tip of the iceberg as far as tax losses are concerned. Hidden costs vary, but include delays caused by road closures and tax losses that are removed from the country's tax net. Individual tax generators, as a proportion of the general population, are actually very few. Road accidents reduce this figure even more, as vehicle drivers are likely to be economically active individuals.

Dangerous driving, bad roads

Our country's accident rate is high. Driving on our roads is no longer a pleasure. It is downright dangerous.

Some stretches of road should be condemned. Drive into Harare on two of our main access roads, being the Beitbridge rd and the Bulawayo rd. There are sections along this road, where it would be safer to drive through the veld, as well as being kinder on the vehicle's suspension. Again there are sections of road where there are more potholes than tar. Driving into Harare along the main Beitbridge, Harare rd by the Chitungweza round about, should be enough to make any sane Zimbabwean ashamed. Not only is this section potholed and rutted, but with the roadside vendors and ET's vying for space it is often only a single lane that is operational and is an accident waiting to happen over and over again.

South Africa built toll roads whose sole purpose was to cater for increased traffic and reduce traffic on their single lane roads. Zimbabwe have now put into place toll roads whose purpose is supposedly for the money generated to repair the potholes and road verges. If this is the case all well and good but it still does nothing to alleviate the congestion caused by increased traffic along single lane high ways.

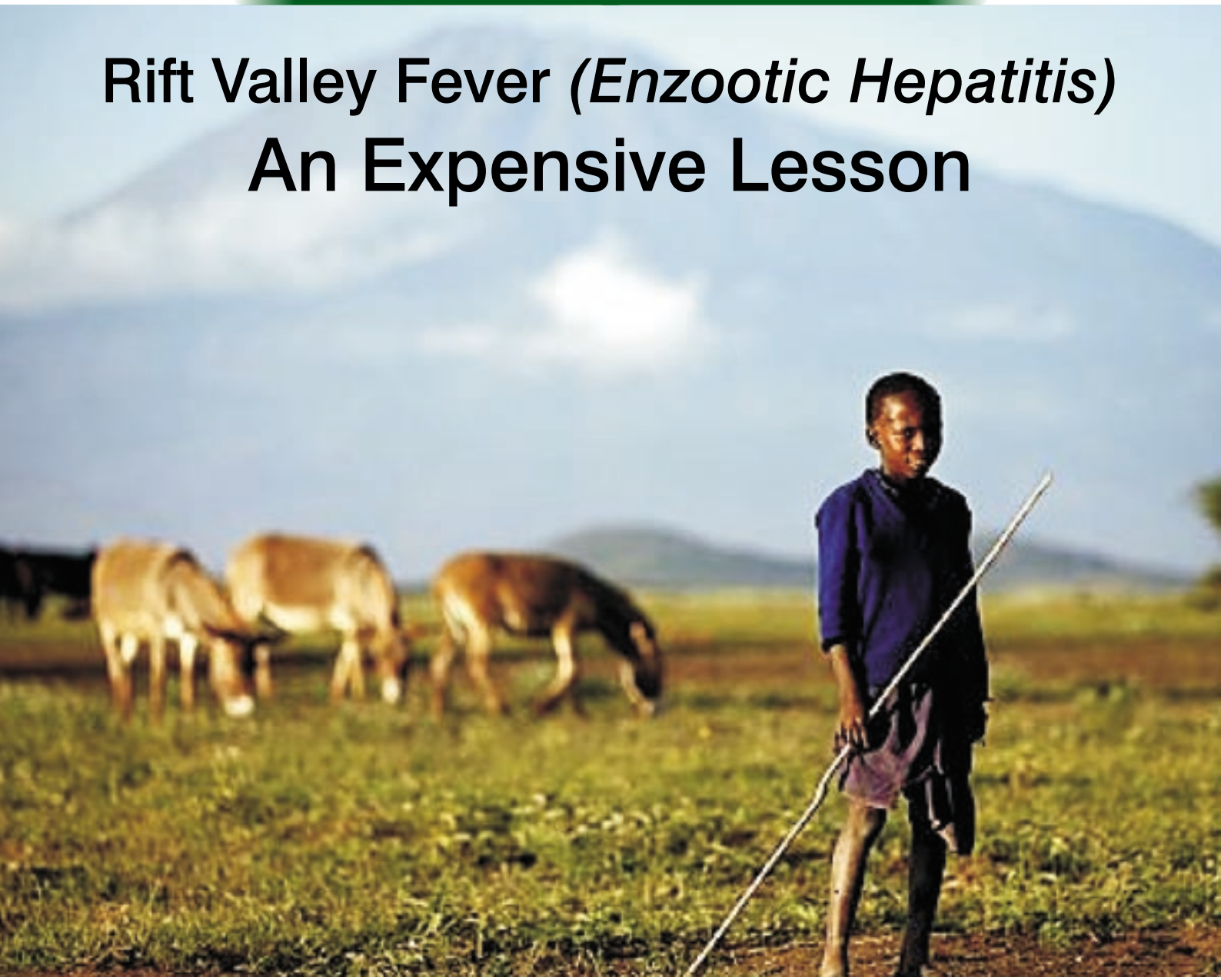
But what is even more alarming is not the old fleet of cars on our roads but many of the drivers' attitudes. They're aggressive and antagonistic and the speed limit is only to be obeyed if there are visible speed traps in the vicinity. There again it is not a matter of paying the legal fine but how much one can reduce the fine through a quiet bribe, should one be unobservant and unfortunate enough to be caught.

Driving at night or in conditions of poor visibility can be terrifying, with arrogant speedsters creeping up behind you attempting to force the slower (safer) traffic over the yellow line which is often occupied by a broken-down truck.

I was taught to dip my lights first at night, to drive with empathy for other drivers, so that they may extend the same courtesy to me. But such niceties are ignored these days, it seems, along with the one-eyed bright-light bandit, as all other functions have long since failed on said car. cfu

By Willie Botha: Special Projects Manager
- Onderstepoort Biological Project (OBP)

Rift Valley Fever *(Enzootic Hepatitis)*
An Expensive Lesson



"Vaccinations cannot be used as a treatment against disease. They can only be used as a preventative which needs to be administered regularly."

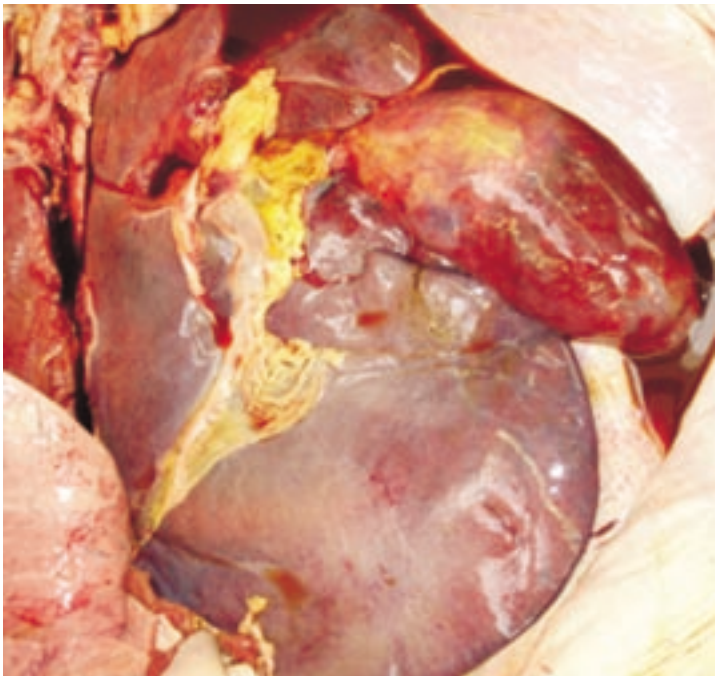
The reason for increased outbreak of Rift Valley Fever (RVF) in South Africa in the summer months is quite clearly due to the fact that the farmers are not vaccinating their livestock against this disease. Because of this the livestock are affected by abortions and death. It is impossible to predict the seriousness of this disease. Nobody expected this outbreak to be so serious in South Africa.

Vaccinations cannot be used as a treatment against disease. They can only be used as a preventative which needs to be administered regularly. Vaccinating regularly will prevent further outbreaks of Rift Valley Fever. This will also give OBP more accurate information and a better chance to have the vaccine readily available for scheduled vaccinating periods. Clients in the high risk areas are encouraged to vaccinate their animals as soon as possible with the necessary vaccine. Should there be an outbreak, clients are advised not to vaccinate by doing so can cause the virus to spread like wild fire. The vaccination needle transmits the disease from a sick animal to a well animal. In the event of an outbreak, it is essential to use a clean needle for each animal.

OBP would like their clients to know that the live vaccine is available direct from themselves or from their local vet or co-op's. OBP have all relevant information available. Both the live (active) and dead (inactive) vaccine is available. It is preferable to vaccinate the livestock in the winter months to protect them against outbreaks in the summer months.

Additional information for livestock farmers

Rift Valley Fever is transmitted by mosquitoes (aedes



Man can get this directly or indirectly through the handling of infected blood and organs. This normally happens when an infected animal has been slaughtered, or when the infected animal aborts or gives birth.

Vaccinating regularly will prevent further outbreaks of Rift Valley Fever.

mosquitoes). It mainly affects small livestock (sheep and goats) but also large livestock as well as game. It is very important to know that this disease can be transmitted from effected animals to humans. Man can get this directly or indirectly through the handling of infected blood and organs. This normally happens when an infected animal has been slaughtered, or when the infected animal aborts or gives birth. There is also evidence that milk that is not pasteurized and meat that is infected can carry this disease to man. Human beings also contact the disease through the bite of an infected mosquito. OBP advises farmers and livestock owners to use protective clothing and gloves and also contact their nearest vet should they suspect an outbreak.

The virus can survive in mosquito lava during the winter months. It can survive in the environment. As soon as the temperature changes after the winter and/or after the first rains, the mosquito eggs can hatch and those mosquitoes will already be carriers of the virus and thereby carry it to the animals as they feed on the animal's blood. Rift Valley Fever can be expected to break out early in the season. Animals that have been vaccinated can lose their immunity after a heavy infestation of round worm, hair worm and brown stomach worm when they lose large volumes of blood because of the infestation.

For further information you can contact Dr Jacob Modumo on +27 12 5221518; +27 82 5741115 or email: jacob@obpvaccines.co.za. Alternatively contact Mr Willie Botha on + 27 21 522 1562; +27 82 8575885 or email: willie@obpvaccines.co.za

By Paul Redfern

World Divided Over New Scramble for African Land

A World Bank report has confirmed that 45 million hectares of land in developing countries were bought in 2009, a tenfold jump from the previous decade.

Moreover, two-thirds of these controversial 'land grabs' have been in Africa where critics say public and governmental institutions offer weak defences against western multinationals and far eastern state companies seeking farm land for food and biofuels.

While many development agencies and African campaigners are aghast at the latest news some believe that good land development projects are exactly what the world needs to solve the food crisis as they bring investment, knowhow, and transport links, as well as creating jobs.

But the morality of the global land rush is finely balanced and even the World Bank appears deeply torn.

While the report endorses the Bank's open-door globalisation agenda, it acknowledges "large land acquisitions come at a high cost. The veil of secrecy that often surrounds these deals must be lifted," it said.

It warns of a 'resource curse' that may enrich a small elite, leaving wreckage behind. Proposals are not properly screened. Peasants are forcibly displaced.

Communal grazing lands are closed off. Some investors manipulate opinion with a media blitz of false promises. Nothing has been produced so far on almost 80 per cent of the land purchased.

Benefits are often minimal, 'even non-existent.' In Africa, the land rush is diverting effort from the core task of helping small farmers raise yields.

The Bank implicitly questions whether it is wise to divert half of the world's increased output of maize and wheat over the next decade into biofuels to meet government 'mandates.'

However, the world needs more food and there is a theoretical reservoir of 445 million hectares of unforested cropland in the world, on top of the 1.5 billion hectares in production.

The issue has set off a fierce backlash, in particular in Madasgascar where a deal with Korea's Daiwoo Logistics to plant corn on territory half the size of Belgium led to the downfall of the government in 2008. The lease was subsequently revoked when the new president said "Madagascar's land is neither for sale nor for rent."

The allure of African land is obvious. The World Bank says industrial and 'transition' countries are losing 2.9 million hectares of cultivated farmland each year.

China is paving over its fertile belt on the eastern seaboard,

and depleting the water basin of the North China Plain for crop irrigation.

The World Bank says global food production needs to rise 70 per cent by 2050 to meet a triad of converging demands: Extra mouths; rising use of animal feed from grains as Asia moves towards a more meat-based diet; and the biofuel drive.

The World Bank said rises in wheat and soya yields have declined from two per cent a year to zero since the 1970s in the west. Yield growth for rice and soya in emerging economies has fallen from three per cent to one per cent.

With few breakthrough technologies on the horizon, the scope for yield gains seems lower than in the past. Irrigation has contributed to past growth in crop yields, but water scarcity in many regions is now a major constraint - The Green Revolution is 'exhausted.'

Wheat prices have doubled since June. The World Bank said the number of people who go to bed hungry each night has risen from 830 million to more than one billion over the past three years. cfu

Brochettes

Ingredients

2 lb's. beef or lamb, cubed in bite-size pieces
1 medium-sized onion
10 sprigs parsley
1 tsp. salt
3/4 tsp. black pepper
2 tsp. paprika
1 tsp. cumin
1 tblsp. vinegar
1 tblsp. olive oil

Directions

Combine all the ingredients in a large mixing bowl. Stir to mix well and refrigerate at least 8 hours or overnight. When you are ready to cook, spear 5 or 6 pieces of meat on skewers. Broil over a charcoal fire until done to your liking. In Morocco, these brochettes are served with French bread and a spicy-hot tomato sauce. Make your own by blending 4 tablespoons of tomato paste, with 2 tablespoons olive oil, and adding 4 tablespoons of vinegar, 2 of water, 1 teaspoon salt and Tabasco sauce to taste.

Servings: 4 to 6

From Science Daily

Scientists Prepare for Confined Field Trials of Life-Saving Drought-Tolerant Transgenic Maize

Crop specialists in Kenya and Uganda have laid the groundwork for confined field trials to commence later this year for new varieties of maize genetically modified to survive recurrent droughts that threaten over 300 million Africans for whom maize is life, according to a speech given recently by the head of the African Agricultural Technology Foundation (AATF) at the World Food Prize Symposium.

Scientists working with AATF believe it's important to explore the potential of biotechnology to maintain and increase food production in Africa, given the large number of families dependent on maize, and warnings that maize yields could drop dramatically as climate change increases drought frequency and severity across the continent.

There is preliminary evidence that the Water Efficient Maize for Africa (WEMA) varieties, which were developed through a public-private partnership, could provide yields 24-35 percent higher than what farmers are now growing.

The process for testing the WEMA varieties has been informed by a series of "mock trials" conducted in 2009 in Kenya and Tanzania. The mock trials carefully simulated field conditions, procedures, and regulatory oversight that will occur in the actual trials.

"The mock trials have provided an opportunity for researchers working on the WEMA project to fine-tune the procedures of carrying out the actual transgenic trial in 2010," according to Daniel Mataruka, executive director of AATF.

The mock trials were supervised by national biosafety committees in both countries and adhered to all requirements that will apply to transgenic plants.

"Everything we have seen in the simulated trials shows that we can safely test transgenic maize varieties in carefully controlled and confined field trials in Africa and evaluate their potential to produce high yields in drought conditions," said Dr. James Gethi, the WEMA-Kenya country coordinator.

Drought is the most important constraint to African agricultural production, and its effects are particularly severe on maize, which is the most widely-grown staple on the continent. For millions of small-scale farmers who rely on rainfall to water their crops, risk of crop failure from drought is a major barrier to the adoption of improved farming practices.

A more reliable harvest could give farmers the confidence to invest in improved techniques that could further boost their yields and incomes.

The push to develop drought-tolerant varieties has been given added urgency by threats likely to come from climate change. A study by scientists at the Consultative Group on International Agricultural Research (CGIAR) warns that by 2050, climate change could make droughts more frequent and intense, potentially causing maize yields to drop by 20 percent or more in parts of East Africa, including northern Uganda and southern Sudan, and semi-arid areas of Kenya and Tanzania. The Food and Agriculture Organization of the United Nations

For millions of small-scale farmers who rely on rainfall to water their crops, risk of crop failure from drought is a major barrier to the adoption of improved farming practices.

A more reliable harvest could give farmers the confidence to invest in improved techniques that could further boost their yields and incomes.

(FAO) has acknowledged biotechnology as a powerful tool in the effort to develop drought-tolerant crops.

The drought-tolerant WEMA varieties are being developed under a partnership involving AATF, the International Maize and Wheat Improvement Center (CIMMYT), Monsanto, and the national agriculture research systems in Kenya, Tanzania, Mozambique, South Africa and Uganda. CIMMYT has provided high-yield maize varieties adapted to African conditions, while Monsanto has provided proprietary genetic resources (germplasm), advanced breeding tools and expertise, and drought-tolerant transgenes developed in collaboration with BASF.

According to AATF, experience has shown that the gains possible through advanced breeding and biotechnology are greater and faster than those that can be achieved through breeding alone.

"There have already been positive gains made in drought tolerance using traditional breeding methods by our partners," said Mataruka. "WEMA is working to further increase those gains in drought tolerance in hybrids adapted to eastern and southern Africa through both advanced breeding techniques and biotechnology."

If the transgenic corn is found to be safe and successful, the new varieties will be made available to smallholder farmers royalty-free. Under its agreement with its partners, any approved varieties would be licensed to AATF, which would then distribute to farmers through local seed supplies at a price competitive with other types of maize seed. The project partners expect that pricing will not be influenced by the requirement to pay royalties, as none of the partners will receive any royalty payment from seed companies for the drought tolerant lines/transgenic trait incorporating their intellectual property protected technology.

Pending regulatory approval, at least 12 WEMA varieties will be tested in confined field trials (CFTs) in Kenya, Uganda, Tanzania, South Africa and Mozambique. After the trials, the transgenic corn produced in the CFTs will be destroyed in compliance with the regulations in the respective countries.

By Allan Savory

The Brown Revolution

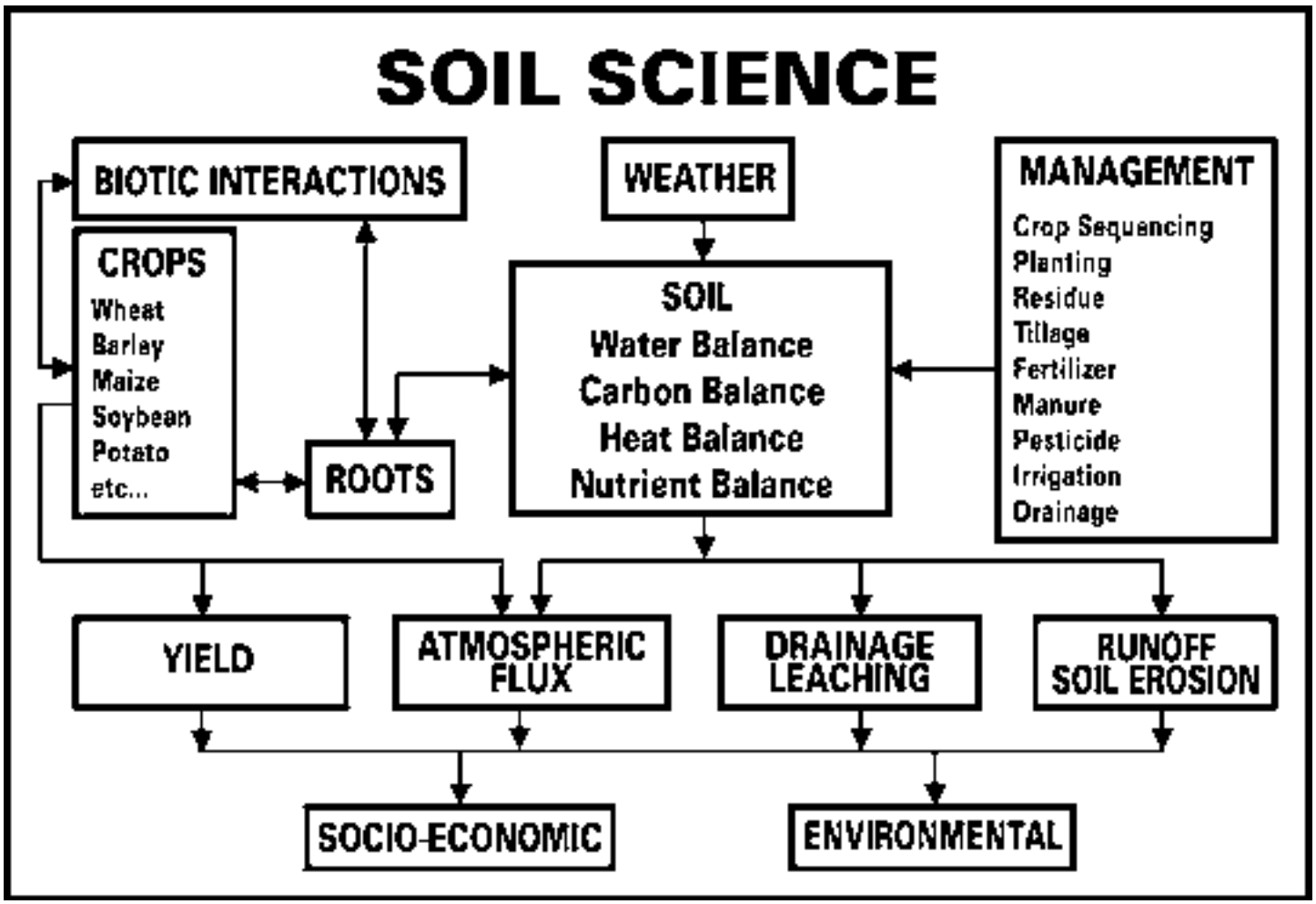
"Holistic Management practitioners are more versed in the other two thirds of the world - the grasslands, rangelands, and savannas. These are environments that co-evolved in the presence of large grazing herbivores, in conjunction with their pack-hunting predators, and they are characterized by seasonal or erratic rainfall, and extended periods of the year with very low atmospheric and soil humidity."

The Green Revolution, based on high input, industrial agriculture (massive inputs of petro-chemicals and herbicides, monoculture cropping, and confinement animal feeding operations), has increased global food production tremendously, but has tended to severely degrade its ecological and socio-cultural capital base in the process. The Green Revolution has not been characterized by ecological or social integrity - quite the contrary. Horrific soil erosion, dead zones at the mouths of rivers, severely depleted levels of biodiversity, impoverished rural communities, soil fertility loss, and oxidation of soil organic matter have been exacerbated by the Green Revolution.

A New Way Forward

The good news is that this can all be reversed, and this is the task in which Holistic Management practitioners have been engaged for the past 40 years. We hypothesize the necessity of a new "Brown Revolution", based on the regeneration of covered, organically rich, biologically thriving soil, and brought to fruition via millions of human beings returning to the land and the production of food.

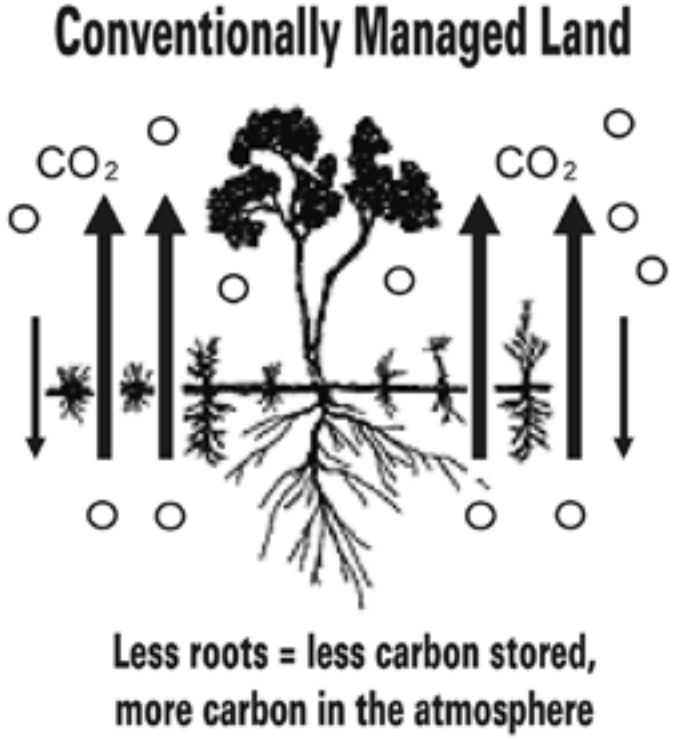
The more humid/biologically productive regions of the world will have to develop agricultural models based on small, biodiverse farms, imitating the natural, multi-tiered vegetation structures of these environments. This is where most of the grain, fruits, nuts, and vegetables will be produced, as well as most of the dairy products, and some of the meat. Based on the premise of ecological integrity, these farms, as units of management, will necessarily be small and highly diverse. The decision making framework of Holistic Management has an essential role to play in the evolution and management of these models in these

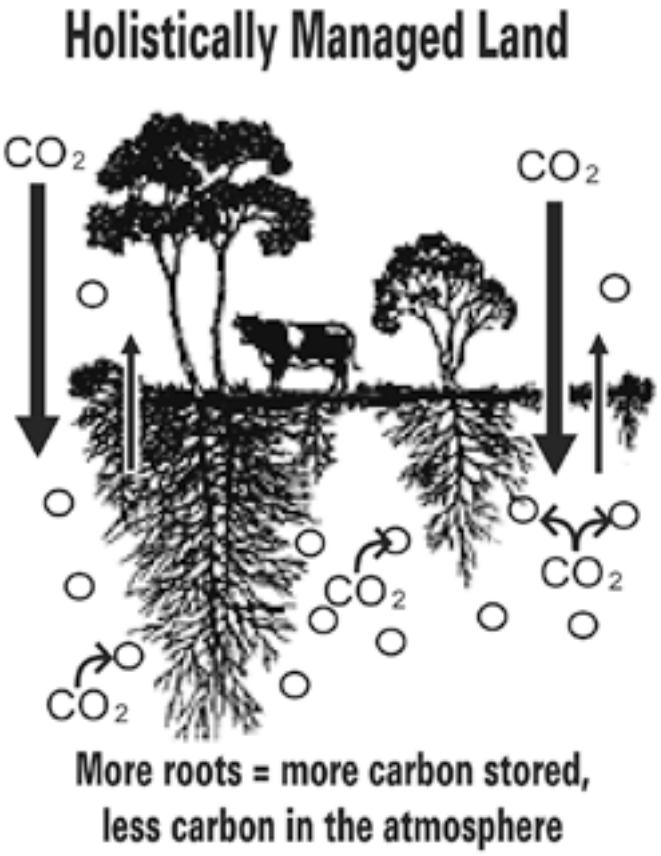


types of environments, but many others are working on and developing the practical know-how, insights, and production models that will be adapted in these more humid environments.

Holistic Management practitioners are more versed in the other two thirds of the world - the grasslands, rangelands, and savannas. These are environments that co-evolved in the presence of large grazing herbivores, in conjunction with their pack-hunting predators, and they are characterized by seasonal or erratic rainfall, and extended periods of the year with very low atmospheric and soil humidity. The presence of these large herbivores, interacting with their landscapes the way nature intended, is critical. Via the skilful practice of holistic planned grazing, we can effectively mimic this behaviour,

Soils that are high in organic matter also possess greater water holding capacity, thereby increasing drought resilience and regenerating aquifer and ground water reserves critical for cities and communities throughout the globe.





reversing land degradation, and generating solar-based profit in the process.

The implications of taking this management approach to scale are massive. Slight increases in soil organic matter, over these huge extensions of the earth's land surface area, will result in the permanent, safe, and natural sequestration of many gigatons of carbon. In effect, we would be putting masses of carbon back where it belongs - in the soil - and more importantly, where it can actually do some good. Organically rich soils feed soil bacteria, protozoans, and fungi, active populations of which lead to ever greater plant-available nutrients and less and less dependence on outside fertilizer inputs. Soils that are high in organic matter also possess greater water holding capacity, thereby increasing drought resilience and regenerating aquifer and ground water reserves critical for cities and communities throughout the globe.

In the process of doing this - in effect, mimicking nature - there is no creation of "waste" (the waste actually becomes an asset), input costs are dramatically reduced, animals tend to be healthier and more productive, and attractive profits (based on ecological integrity, or true wealth, derived directly from the sun) are the result. Of course, we are also producing nutrient-dense, pasture-produced protein - exactly what our Palaeolithic, hunter/gatherer-evolved physiology is designed to consume.

Through partnerships with like-minded investors and our global network of tried and tested Holistic Management practitioners, The Savory Institute is actively directing capital into the Brown Revolution. Multiplied over billions of acres, these partnerships will play a critical role in arresting climate change and averting global catastrophe. Contact the Savory Institute to learn how to be a part of it. cfu

Manure Provides Higher Returns Than Chemical Fertilizers, Economist Says.

No significant differences in corn yield were found between organic and chemical sources of nutrients, but a Texas AgriLife Research economist said manure generates higher economic returns than anhydrous ammonia.

Dr. Seong Park, AgriLife Research economist, recently had his research published in the Agronomy Journal. The work was from studies he conducted in the Oklahoma Panhandle while at Oklahoma State University and finalized while in his new position at Vernon.

The long-term experiment involved the use of pig and beef manure on irrigated corn fields, he said. The testing was conducted in part due to a rapid growth of animal population and density in that region, as well as the northern part of the Texas Panhandle.

Park said when swine manure, which is normally stored in open-air lagoon systems, is properly applied and the economics figured, the effluent can be used as manure with minimal environmental and nuisance concerns.

Animal manure, he said, benefits producers by reducing waste management costs and the need for chemical fertilizers because it contains multiple essential crop nutrients, according to previous research. Park said the key between animal manure transitioning from a cost (for disposal) to a benefit (as a fertilizer) is determined by agronomic and economic factors such as chemical fertilizer costs and equipment and labour needed to apply each.

Anhydrous ammonia was the most costly nitrogen source across all three equivalent nitrogen rates of 50, 150 and 450 pounds of nitrogen per acre, with costs of $30.86, $54.88 and $126.95 per acre, respectively.

He said the higher costs of anhydrous were due to the purchase price, which is not required normally with the use of beef and swine manure. Swine effluent had the lowest costs at $12.06, $17.98 and $34.51 per acre for the three application rates.

The lower costs for the swine effluent are associated with the ability to apply it through existing irrigation equipment, requiring only minimal purchase to pump from the lagoon to the center pivot, Park said.

Both the anhydrous and beef manure require the purchase of application machinery, he said, which adds a fixed cost. Because of that cost, beef manure application costs were higher than swine, at $30.52, $35.47 and $47.19 per acre, respectively at the same rate.

Beef manure, however, becomes a more economical

choice if the crops are located away from the originating farm of either manure, Park said. While swine effluent has a lower breakeven price, it is too bulky to transport off-farm to other producers.

"The breakeven is figured by using the actual price of corn plus the cost of fertilizer," he said. "During this study, there was a widening margin in the breakeven between the animal manure-treated corn crops and anhydrous ammonia-treated corn crops, which generated an increased profitability for producers and increased the economic viability of marketing beef manure as a commercial fertilizer."

Park explained if beef manure averages $2.20 per ton with a shipping cost of 50 cents per mile, it can be profitably transported up to 29 miles from its point of origin in the Oklahoma and Texas panhandles and be competitive with high anhydrous ammonia prices, as experienced from 2005-2007.

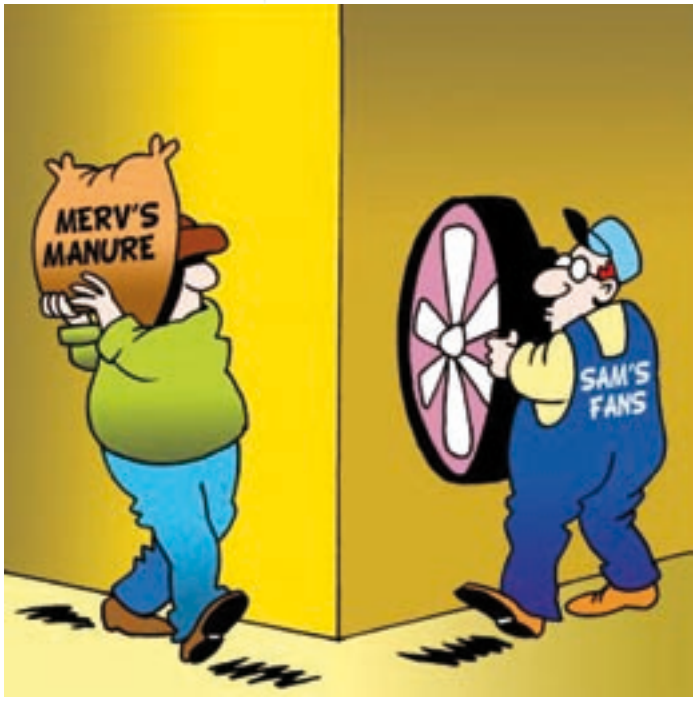
Another benefit of animal manures is the improvement of soil properties such as micronutrients and soil pH, Park said. Throughout his experiment the beef-manure and swine-effluent plots maintained higher soil pH levels than the corresponding anhydrous plots.

Additionally, continued application of anhydrous can lead to acidification and thus losses in productivity, he said. Appropriate nutrient-management practices should be implemented to prevent environmental damages.

Park also warned that site-specific conditions such

as weather, animal waste management practices and soil properties would need to be taken into consideration when adapting this information to locations outside the Oklahoma Panhandle.

"This is a unique economic study on various nitrogen fertilizers using rare and valuable data from a long-term field experiment from 1995 to 2007," Park said. "The next step is to determine best nutrient practices based on this experimental data."



BY DAVE HOLNESS

Want More Money for your Milk Solids? It's All in the Feed

Recently a number of producers have been having problems with the chemical composition of their milk, namely the protein and fat content. The importance of milk quality to dairy farmers is the milk processors and the market are prepared to pay a premium for milk of an acceptable quality standard. Although there are a number of factors which can affect milk composition, e.g. cow age and stage of lactation, the dominant influence is the feed that the cow receives.

MILK PROTEIN

The secret to maintaining adequate levels of protein in the milk is the provision of a healthy rumen environment. This entails feeding good quality fibre of a suitable length (+2.5cm) and digestibility which can form a mat that floats on top of the fluid in the rumen. If the cow is well fed, the rumen mat forms the ideal environment for the growth and development of a large population of rumen microbes. As the microbes die, the microbial protein passes down to the mid and hind gut where it is digested and the amino acids pass through the gut wall where they are reconstituted into protein to supply the cow's needs, including adequate amounts for milk production. An additional source of protein for milk production is the protein in food which passes straight through the rumen (undegradable bound protein) and is digested and broken down in the mid-gut.

The other important aspect of fibre in the diet is its chemical and physical form, normally measured as "physically effective neutral detergent fibre" (pe NDF). If the pe NDF is above 20%, it provides adequate "scratch factor" which provides for healthy rumen function as it stimulates rumination and saliva production and also buffers the rumen.

Although there are a number of factors which can affect milk composition, e.g. cow age and stage of lactation, the dominant influence is the feed that the cow receives.

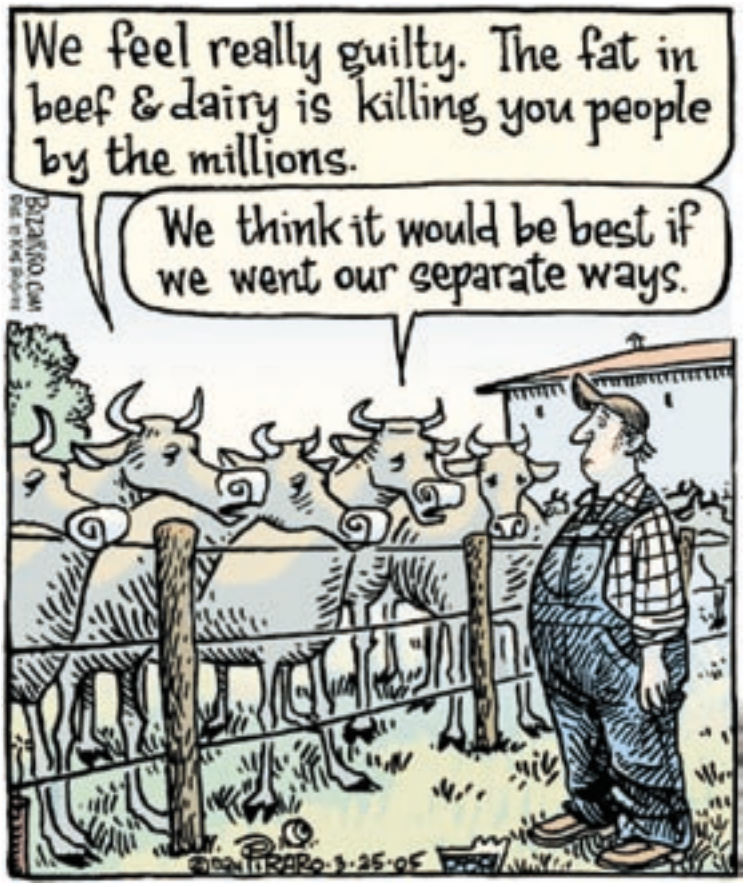
MILK FAT

Fat in the ration passes straight through the rumen without being broken down, and some will contribute to milk fat formation. However the inclusion of fat in the ration is limited, as 7 – 10% of the fat will start coating the roughage and reduce the microbial population. Energy sources coming into the rumen, either quickly fermentable e.g. sugar and starches, or slowly fermentable, e.g. fibre and pectin, will be broken down by the microbial population into volatile fatty acids from which fat can be synthesized. Again pe NDF is important and it has been shown that a 20% pe NDF is sufficient for a milk fat content of 3.4% in Holsteins.

In summary, the answer to maintaining good milk quality is the provision of a balanced diet with contains adequate

The answer to maintaining good milk quality is the provision of a balanced diet with contains adequate amounts of good quality fibre.

amounts of good quality fibre to provide a rumen mat for a healthy population of rumen microbes, and is of sufficient digestibility to be broken down relatively quickly and release volatile fatty acids into the gut.



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In The News

THE FIGHT AGAINST THE TSETSE FLY
Waterbuck - Scented Cattle

Researchers have developed repellent collars containing the synthetic equivalents of the odours of animals that tsetse flies tend to avoid – such as waterbuck. Worn around the necks of cattle, the collars confuse the flies – reducing the likelihood of bites, which transmit sleeping sickness in humans (trypanosomiasis).

The International Centre of Insect Physiology and Ecology (ICIPE), which developed the collars, says up to three million cattle die each year from the disease. The EU has signed a US$2 million (1.5 million) deal with ICIPE to evaluate the collars with Maasai pastoralists in East Africa over the next 3 years. Early tests in Kenya have indicated the natural repellents will be a breakthrough.

Jatropha Warning

From Spore Magazine

Large-scale farming of the jatropha tree has scant commercial value and can add to food insecurity, according to a new study from Kenya, where the biodiesel crop is grown extensively. The Jatropha Reality Check carried out by the Kenya Forestry Research Institute together with the World Agroforestry Centre finds that the crop is not economically viable when grown as a monoculture or in plantations. Researchers behind the study are urging the Kenyan government to stop promoting the tree as a plantation crop. "We believe doing otherwise would be extremely irresponsible and could exacerbate existing food insecurity throughout the country", says the study. After surveying jatropha farming in various parts of Kenya, the study concluded that the tree does not do well in arid areas as it requires large quantities of water and fertiliser.

The warning comes as the country gears up for a major jatropha biodiesel project, with Italian company Nuove Iniziative Industriali srl clearing 55,000 ha leased from the Malindi County Council for jatropha plantations. The biodiesel would be for local use, as well as for export to Italy.

Alternative Fish Feeds Use Less Fishmeal and Fish Oils

As consumers eat more fish as part of a healthy diet, U.S. Department of Agriculture (USDA) scientists are helping producers meet this demand by developing new feeds that support sustainable aquaculture production.

Commercial fish farms have traditionally fed feeds that include high levels of fishmeal and fish oil, according to fish physiologist Rick Barrows with USDA's Agricultural Research Service (ARS). But the fishmeal in these feeds comes from small, bony fish species like menhaden, herring and capelin, which are in short supply.

Also, more people around the globe are turning to fish as a source of lean protein, driving the growth of aquaculture worldwide. Aquaculture now supplies half of the seafood produced for human consumption.

To satisfy these demands, Barrows and his colleagues at the ARS Small Grains and Potato Germplasm Research Unit in Hagerman, Idaho, are developing alternative fish feeds made from concentrated plant proteins.

Barrows produces the feed himself using a piece of food manufacturing equipment called a "cooking extruder." Barrows is formulating and manufacturing feeds for several fish species, including trout, salmon, white sea bass and yellowtail.

At the ARS National Cold Water Marine Aquaculture Center in Franklin, Maine, research leader William Wolters works with Barrows to develop diets for Atlantic salmon, using concentrated plant proteins. Protein levels in most grain and oilseed sources are low and need to be concentrated to reach the high protein requirements of fish.

Wolters is currently evaluating six experimental diets which contain combinations of alternative proteins, plus a fishmeal diet being fed to fish for comparison. According to Wolters, the ongoing studies seem to indicate that the modern alternative diets work better for the fish than previous alternative diets.

Feeds for warm-water fish are being developed at the Harry K. Dupree Stuttgart National Aquaculture Research Center's facility in Fort Pierce, Fla. ARS fish biologist Marty Riche is working with Barrows to develop feed for pompano, one of Florida's highest valued fish. Riche uses ingredients such as corn, gluten meal, and soy proteins to develop feeds that contain less fishmeal.

ARS researchers like fish biologist Marty Riche, shown here feeding highly valued pompano, are developing new plant-based fish feeds that can help support sustainable aquaculture production. (Credit: Photo by Stephen Ausmus)