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Agribusiness

Magazine

**FARM RISK MANAGEMENT
STRATEGY**

**THE BUSINESS OF PEPPER
PRODUCTION**

INSURANCE IN AGRICULTURE

STOCK THEFT PREVENTION

**CATTLE BODY CONDITION
SCORING**

**MEET THE FARMER: KILLIAN
RUZANDE**

**VALUE ADDED AGRICULTURE:
KEYS TO SUCCESS**





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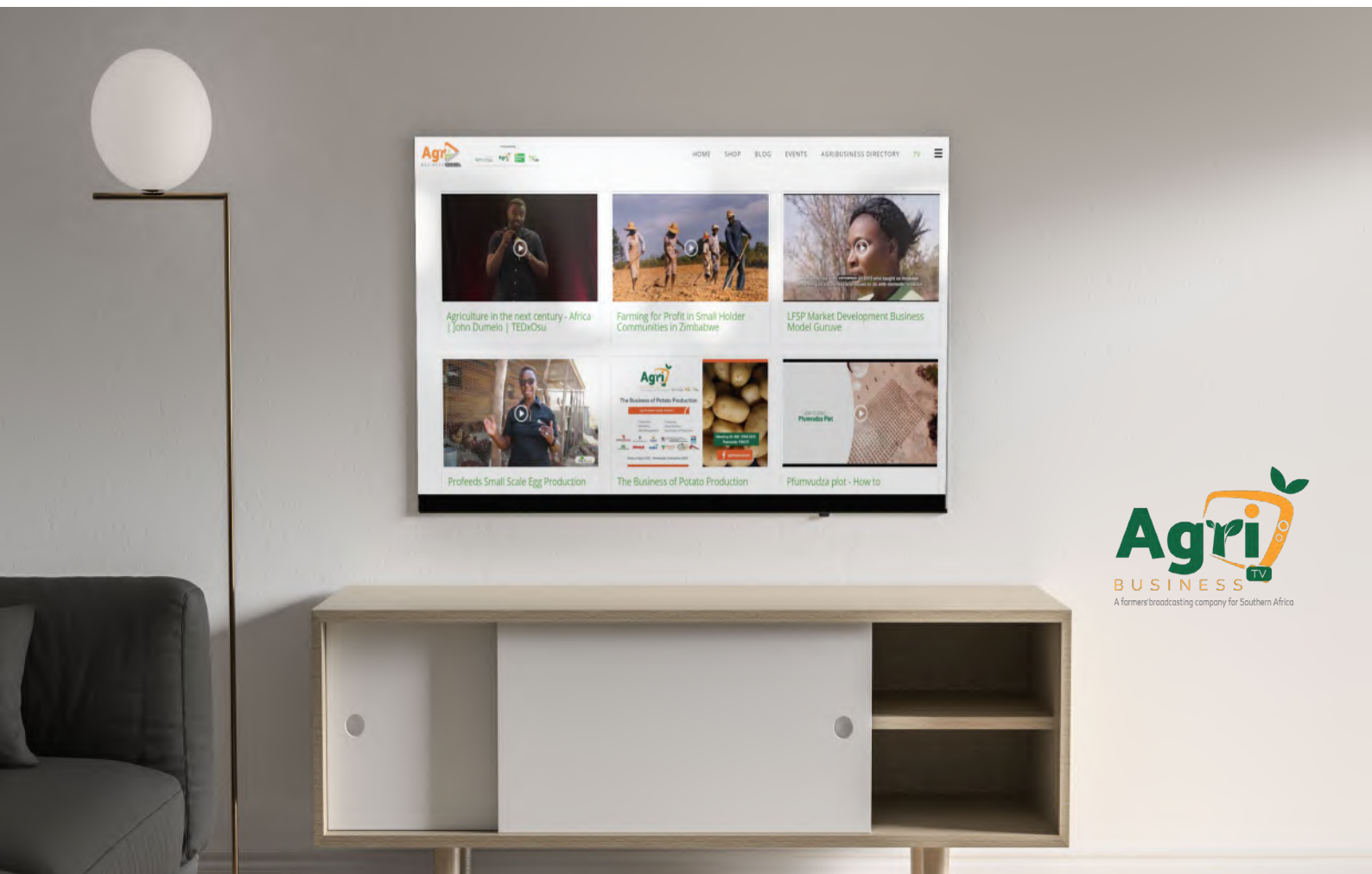
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LAUNCH: AGRICULTURE COLLEGES CURRICULA

Did you miss the Agricultural Education for Development Curricula AE4D 5.0, Virtual LAUNCH by the Hon Minister of Lands, Agriculture, Fisheries, Water and Rural Resettlement: Hon Dr. Anxious Jongwe Masuka? No problem, you can watch it on [YouTube!](https://www.youtube.com/watch?v=...)



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DO GREAT THINGS EVERY DAY

Farm Risk Management Strategy

by Nyasha Mutuva

As we discussed in the last article, risk is divided into production, marketing, financial, institutional and human resources. The incidence of risk in agriculture is important to all players in the Agricultural Value chain.

In this article, we look at steps you can take to reduce exposure and

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how your farm business can recover from risk.

Reducing exposure

Every decision you make on your farm business carries risk. The result may not be as expected.

It is therefore important to hope for the best and plan for the worst.

Risk management involves knowing how to reduce the chances of unfavourable circumstances and how to deal with such in case the unexpected happens.

Say you are planning to raise 5 000 broilers for



the meat market. List the risks involved (see last article). Think of the steps you can take to minimise the likelihood of such unwanted events.

The following would help reduce risks; biosecurity, vaccination, engaging veterinarians, training, securing a market before production, fireguards and securing the farm help? Batch management can also help reduce the losses caused by risk.

This exercise should be thorough and done before going into production.

Old Mutual can help you with information on how to come up with ways to reduce risk on your farm business. In the case of crops, several strategies can be adopted to reduce risk including crop rotation, irrigation, good agronomic practices, diversification and equipment maintenance.

Good management practices reduce risk and lead to better yields and in many cases increased income. Some, however, increase costs

and result in reduced income. Some farmers have decided to grow only the low value crops/ livestock, but this results in lost opportunities for high income.

Many farmers believe they have no control over the market. The supply chain is now weighed down by middlemen. However, there are strategies farmers can follow in order to strengthen their position in the market as sellers.

The first step is to adopt market driven production. Many today do the opposite, they start with production and efforts to understand or know the market come after.

Prior to production, gather as much information as possible. Look at the market price trends and how seasons have played a role in the market dynamics. Visit as many markets as possible. When is crop "A" mostly available? When is it in short supply? What can I do to supply during off-season?

Market bulletins produced by the Agricultural Marketing Authority

can be your starting point.

Equipped with such information, you can make good decisions on what to grow and when. This reduces the risks of low market prices due to oversupply.

Since the above will not completely reduce market risk, we recommend contract farming arrangements, where the buyer agrees to purchase your crops/ livestock at a given time for the given price.

Market risk can also be avoided by reducing production costs. Clusters/ associations can help farmers to work together and negotiate for discounts from input suppliers.

Recovering from risk

We know you will try to work hard and reduce exposure to risk. When, despite all your efforts, the inevitable happens, you will need a fall-back plan. You will need help to return to state you were in before the unfortunate incident.

Old Mutual Agriculture Insurance covers four

broad categories which are **crop insurance**, **livestock insurance**, **agri-assets** such as farm buildings, **equipment and machinery** as well as **weather index insurance** for small scale farmers.

The crop insurance, cover is provided for negative impact from the effects of fire, hail, pre-germination, frost, drought or too much rain as well as the storage and transit risks and applies to a variety of row crops (including maize, soya, wheat and barley), horticulture crops (including blueberries, peas) and fruit trees (macadamia nuts, stone fruits, avocados and bananas). **Old Mutual** offers

Multi-Peril crop insurance cover, a yield-based cover for the above mentioned crops targeting commercial farmers and Weather Index (Drought) insurance for grouped small scale farmers.

The weather index (Ruzhowa/ Uthango) protects your investments (inputs) in the event of a drought. It's a special product for small holder farmers, as they are financially excluded from the traditional agriculture insurance products that are available on the market.

Remember, farming is a business and insurance plays a major role in ensuring your success.

In the next article we look at the right attitude towards farm business risk management.

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YOUR DIGITAL PLATFORM TO BANK, INSURE, SAVE & INVEST ON THE GO



by ICZ

The Insurance Council of Zimbabwe is the voice of the short-term insurers and reinsurers in Zimbabwe. It was established in 1964 and has twenty-six members comprising of eighteen short-term insurers and eight reinsurers. The insurance sector is a key pillar of the financial services sector as well as a central element of trade and economic development. Our members play a crucial role in economic development not just at macroeconomic level but also in terms of the activities of individuals and businesses. As ICZ we exist to promote, advance and protect the interest of our members as well as the insuring public.

Our members offer a variety of short-term insurance products which include agriculture or farming insurance that provides cover against the loss or risks associated with agriculture business. Agriculture insurance provides cover for

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crop damage, fire, motor vehicles, commercial vehicles, tractors, trailers and farm implements, livestock perils among many other covers.

ICZ promotes and raises awareness on all insurance products offered by its members. Association members are as individual companies involved in marketing their products as well as work with targeted farmer groups interested in crop insurance. ICZ has partnered with Agribusiness Media to raise awareness on agriculture insurance in terms of products available, benefits associated with insurance and processes involved in insurance policy management. A series of articles will be published through

Agribusiness Media platforms complimented by a series of webinars as a direct interactive platform between ICZ and the farming agriculture

sector.

The main consumers of agricultural insurance are commercial and contract farmers. Despite agriculture being a major contributor to the Zimbabwe economy, the uptake of agriculture insurance remains subdued due to various factors as follows:

- Lack of insurance products that address the needs of smallholder and subsistence farmers who are the majority in Zimbabwe following the land redistribution exercise.
- Mistrust in insurance services.
- Reliance on traditional self-insurance in risk and loss management.
- Thin profit margins in the sector particularly for small scale commercial and subsistence farmers.
- Lack of knowledge on the benefits of insurance and risk management services.

In order to address the challenge of low consumption of insurance products, the short-term insurance sector is working at developing appropriate products to suit the needs of all farmers. This initiative includes development of insurance products that mitigate the adverse effects of weather conditions on the sector on the agriculture business.

The Insurance Council of Zimbabwe, as an association of short-term insurers offering crop insurance, is working with the regulator, the Insurance and Pensions (IPEC) to revolutionise agriculture insurance along global trends by setting up a framework to offer weather-indexing products.

Engagements with relevant government departments and the regulator IPEC are also in progress to explore the establishment of a national agricultural insurance pool. The exercise will recommend the development of relevant microinsurance products for the benefit of small scale and subsistence farmers in line with the national strategy for financial inclusion.

Through farmer organisations, ICZ will soon roll out educational campaigns on agriculture insurance. Besides raising awareness on the products available on the market, the exercise will educate farmers on how to effectively make use of insurance and risk management for their

farming operations.

Most small-scale farmers should appreciate that farming is a business venture that should be treated and protected as such.



VALUE ADDED AGRICULTURE: KEYS TO SUCCESS

Introduction

The value of a product or service can be increased at different stages of its production or delivery by the addition of features for which consumers are willing to pay more. The key element to successful initiatives is a clear market orientation. Added value can start at the farm with basic processing of primary products and valorisation of wastes. New and emerging trends in consumer preferences are also providing ever more opportunities to successfully add value

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by differentiating products in terms of their additional qualities.

What is added value?

Adding value to a product or service means turning it into something for which consumers will pay more. This can be done at all stages along the supply chain.

Start with the market

In agricultural marketing, there are the “push” and the “pull” approaches. The

“push” approach means producing a product, and then “pushing” it onto consumers—the traditional means of marketing many commodity crops.

The “pull” strategy, however, is increasingly becoming the norm in today’s environment. With this approach, products are “pulled” out by consumer preference. It appears that most successful producers apply this “pull” approach and looked for an existing market outlet or opportunity,

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Sugar cane bites in a supermarket
Maximos Kwenda










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rather than producing a product and then looking for markets.

Farmers' markets are a good testing ground. Some agripreneurs doing value addition either test-marketed or were actually asked to develop products by buyers/the market. It is about producing to meet the needs of the consumer. Those who do not let the market dictate their choices of activity, usually start small and learn about niches they can fill.



Keep informed

Visit other successful agripreneurs, take notes, videos and any material that helps you to learn more. Use social media, calls, emails, field days and farmers events to connect with other farmers and learn their keys to success. However, be aware that others may see you as competition and not be willing to share their knowledge. A good idea is to look for information from a grower in another province who will not see you as a threat.

Also analyse the information you get as some

farmers may exaggerate information such as selling prices and profits. Last year, a farmer found himself stuck in a foreign country with fresh packaged produce after he made decisions based on information received from other farmers.

Planning is key

Planning is often neglected since there's no immediate payoff, but it is essential to success. It is true that failing to plan is planning to fail. It is not wise to fall into the trap of writing a plan just to secure a loan. The rate of failure for small entrepreneurs in the first 5 years is 90

%. Careful planning is crucial to avoid failure, or at least to minimize your losses as you learn. You may or may not need a formal business plan, but you do need a strategic plan. This plan will define your business mission, your present situation, and where you want to be in the next few years. You will need to cover assumptions and risks, goals and objectives and how you will report progress. Be realistic in terms of goals, pricing, and the limits of your time. Start on a shoestring and remain flexible. Realize that the best-laid plans can go wrong and that things

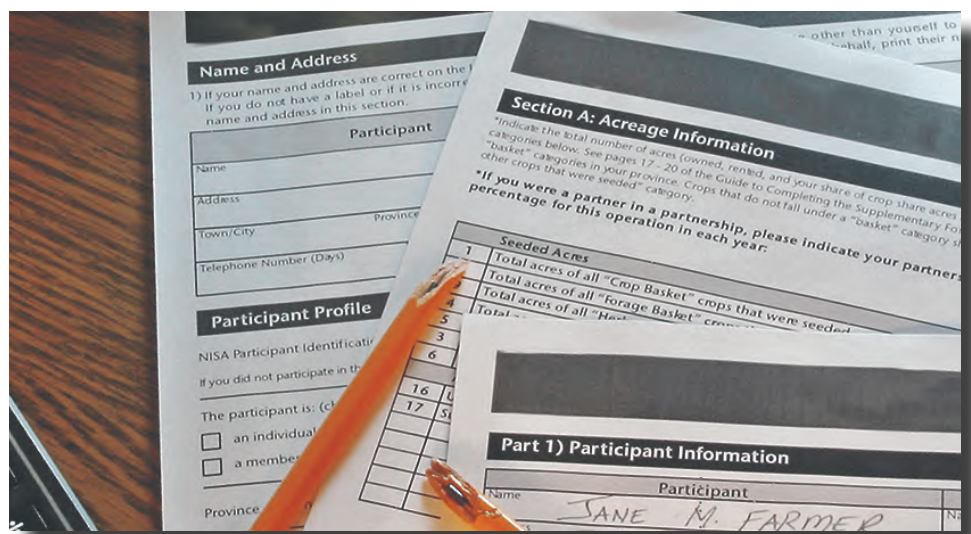
Visit other farmers
Image: Killian Ruzande

change. You need to roll with the punches. Prepare for issues related to a sudden increase in demand since the worst thing you can do is not be able to fill orders.

Continuous Evaluation

A plan that is not periodically reviewed is nearly useless. Your business is constantly changing and your plan must be reviewed and modified accordingly. The plan must be kept current for you to effectively measure your performance. Be ready to change in midstream, as there is no way you can predict marketing. As you gain more experience and knowledge, you should incorporate your new perspectives and insights into your planning. Be sure to keep examining your original goals and make sure that your business is still meeting your goals.

A producer who started out making goat cheese decided to add gourmet dinners and a bed-and-breakfast operation. As she says, "I went from manufacturing a product toward more involvement with the community." While she admits that she is not fully using her cheese making plant facilities, she explains, "I made a conscious decision to become more active with the



local community in the direction of agritourism instead of expanding the cheese production." She keeps good records and once a year evaluates how well the business is meeting her goals. Her goals have changed since she started the business. "Ultimately my goal moved toward becoming more a part of the community. Being able to influence the community meant maintaining a higher profile in order to effect change."

Perseverance

Why is perseverance a key to success? It's simple: most businesses take a long time to get established. It can be tough finding out how to get started with adding value to your farm products. You will need a good deal of perseverance just to figure out how to produce the

products, much less how to market them.

A cheese maker says, "We always intended to process, but we did ship milk for a couple of years just to get a cash flow going. We wanted to have a household business and be able to work together. I learned what equipment we needed and how to set it up by visiting other processing plants, reading professional journals, and working with cheese making professional organizations. We worked closely with the health department on building plans to obtain their sign-off. Small-scale milk processing equipment was very difficult to find. I worked at an off-farm job to finance the equipment while my husband stayed home to build. There wasn't much literature

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Planning is key

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"When accuracy matters"



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available to learn how to make cheese. I had to 'hunt and peck' for information. I did take a university course, but I'm mostly self-taught. We started making one kind of cheese then added varieties to meet market demand as I learned how to make them."

Identifying your niche and building a customer base also takes time. You may have to do a lot of experimentation to find out what sells. Like any other good relationship, developing relationships with customers doesn't happen overnight. You will need to keep approaching potential buyers despite the inevitable rejections. "Understand that no one wants to be the guinea pig to test your product acceptance. Be prepared to attend trade shows and seminars, advertise, and market to consumers for an extended period of time without profitability.

Adequate Capitalization

A business is likely to operate at a loss for at least the first year of operation. Make sure you have adequate resources. Remember that a business can fail due to lack of capital.



The amount that you'll need will depend on the type of business. Manufacturing businesses will need more capital than service businesses. After figuring out how much you'll need for your buildings and equipment, you'll also need to have enough cash on hand to cover operating expenses for at least a year. Be sure to include some salary for yourself in the operating expenses. You will need to have enough money to live on until your business becomes profitable—which, as we've seen, can take years. Successful marketing takes money. For many products, explains a producer of "gourmet" vinegars, "Upscale packaging is all-important to getting a jump on the marketplace, and you need adequate capital

for packaging."

While good planning can minimize unforeseen costs, no one can plan for every contingency. Your budget should include some funds for these costs. While you'll need capital, make sure that you balance the need to plan for the unexpected with the need to minimize your debts. "Watch your debt load! People often buy the wrong machinery, which can be a very costly mistake," cautions a producer. This is another reason to plan carefully and to start as small as you can, bearing in mind the production capacity that you may need in the future.

An extremely important form of capital is cash. Managing your cash flow is crucial to success;

Make sure you have adequate resources.

some say that cash flow is more important than profit. You can go a long time breaking even, especially if you remember to pay yourself rather than ploughing every dollar back into the business. But if you fail to have enough cash to pay your suppliers, creditors, or your employees, you're out of business! Seasonal businesses, as many agricultural enterprises are, are even more vulnerable to running out of cash in the off season. This aspect of planning must not be neglected.

Wholesaling, while it's not for everyone, can be a means of getting around seasonal cash-flow problems. For example, a goat cheese maker is now focusing on year-round wholesale cheese sales to retail and specialty stores, while building her agri-entertainment business during the spring and summer months. "Wholesale provides us with income to pay for the upkeep expenses we incur during the off-season"

Focus

"Educate yourself about your product and differentiating yourself in the marketplace," advises a salad mix grower. "You need to be aware that the expectations of the



public and the conventional business world are that your product is no different from any other product out there," adds a cheese maker.

To be able to both add value and capture that value for yourself, you'll need to think strategically—what is your competitive advantage? A sustainable advantage is some aspect of your business that is unique and would be very hard for others to copy. Focus in on how to best use that advantage.

A cheese maker says, "All our marketing is done direct to the consumer via on-farm sales.

On-farm marketing is the best strategy for us, since our location is one of the last remaining agricultural pockets near

a population centre. It's part of the culture of the area to drive out to farms, and our cheese is an exclusive item in the area. Differentiating yourself in the marketplace and educating your customers about your product are keys to success, I think."

A salad mix grower says that he decided to produce salad mix because "it's a narrow niche with high demand from gourmet restaurants and stores." His previous experience in the business world made market development and planning target markets among the easiest parts of planning for him. He did some market research, and having received a favourable response to small test plots of salad mix, he decided to pursue the enterprise.

Social media is a good marketing tool.

He started out by wholesaling, but found it unprofitable. “The least effective marketing strategy is wholesaling. If your strategy is to sell large amounts to very large corporate users, such as hotels or chains, and dealing with purchasing agents, you won’t succeed.”

Establish a loyal customer base

“My marketing activities evolve from year to year. There is one constant: the value of face-to-face interactions with customers at shows and market.” — a producer of herbal body care products.

“Our relationships with our clients are the most important and we do everything on a very personal basis,” explains one producer. Another says that her most effective marketing strategy is “having a personal relationship with the buyer—a relationship of trust over time.” A producer of baked goods and jams says, “One of the most effective marketing strategies that we use is to do favours at the end of the season. We give special gifts to all our regular customers, and do special gift packages for people.”



A cheese maker includes a brochure and recipes with her products, but does not include labeling as part of her marketing strategy, since it is too costly. She finds word-of-mouth and direct contact with customers to be the most effective marketing strategies.

“Direct contact builds a personal relationship. Our customers feel like they are also our friends. We hold an annual open house to build new relationships and add to our mailing list, as well as to reinforce existing relationships.” She finds “any kind of broadcasted mailings, newsletters, and the like that are not targeted to previous customers” to be the least effective marketing strategy.

Read more

www.attra.org/attra-pub/keystosuccess.html

<https://enrd.ec.europa.eu/sites/default/files/publi-enrd-rr-22-2016-en.pdf#page=4>

Establish a loyal customer base

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The Business of Pepper Production

Windmill

Pepper is popular in Zimbabwe especially as an additive to gravy/soups or relishes. Peppers generally are sold through the retail markets although they can be found at open vegetable markets. Wholesale buyers include Favco, Selby, and Willowvale wholesale amongst a host of retailers who also pack and resell the crop.

The most popular types of peppers in the market are green and red peppers. Peppers are not difficult to grow but must not be planted in frost-prone regions. This production guideline provides growers with information on how best to grow peppers.

Cultivars

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Peppers that are frequently grown are varieties of *C. frutescens*, which are the peppers commonly grown in the vegetable garden and include those from which red pepper, cayenne pepper, tabasco, and paprika are made. There are many varieties of garden peppers.

They are divided into two main groups: the sweet peppers or mild-flavoured varieties, which are used for stuffing, salads, and garnishing; and the hot peppers, which are mainly used in sauces and flavouring. The Spanish word "Chili" describes peppers of all kinds, but in English,

the name is usually only applied to the pungent varieties used for flavouring. *C. frutescens grossum*, the sweet or bell pepper, is a popular vegetable. Certain types of peppers are very beautiful when grown as potted plants, especially in the late summer and early winter.

The best are *C. frutescens cerasiforme*, the cherry pepper and *C. frutescens conoides*, the cone pepper. The varieties of these kinds have red, purple or cream-coloured fruit.

Climatic requirements

Pepper is a warm-season crop, which performs well under an extended frost-


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 **MASSEY FERGUSON**

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free season, with the potential of producing high yields of outstanding quality. It is very vulnerable to frost and grows poorly at temperatures between 5 and 15 °C.

The optimum temperature range for sweet pepper is 20 to 25 °C. The germination of pepper seed is slow if sown too early when soil temperatures are still too low, but seedling emergence accelerates as temperature increases to between 24 and 30 °C. The optimum soil temperature for germination is 29 °C. Low temperatures also slow down seedling growth, which leads to prolonged seedling exposure to insects, diseases, salt injury or soil crusting, any of which can severely damage or kill off the seedlings.

High temperatures adversely affect the productivity of many plant species including green pepper. Sweet pepper requires optimum day/night temperatures of 25/21 °C during flowering. The exposure of flowers to temperatures as high as 33 °C for longer than 120 hours leads to flower abscission and reduced yields.

Pollen exposed to high



temperatures (>33 °C) normally becomes non-viable and appears to be deformed, empty and clumped. Temperatures lower than 16 °C can lead to fruitless plants.

Higher yields are obtained when daily air temperature ranges between 18 and 32 °C during fruit set. Persistently high relative humidity and temperatures above 35 °C reduce fruit set. Fruit that is formed during high-temperature conditions is normally deformed. Sweet peppers are also very sensitive to sunscald. Fruit colour development is hastened by temperatures above 21°C.

Soil requirements

Bell peppers prefer deep, fertile, well-drained soils. Avoid planting in low-lying fields next to streams and rivers because these sites are subject to high humidity and moisture conditions and, therefore, especially prone to bacterial spot diseases. Producers should also avoid fields where long residual corn or soya bean herbicides have been used because herbicide carry-over can cause serious damage to peppers. Pepper fields should be located as far away from tobacco plantings as possible owing to potential spread of aphid-transmitted viruses from tobacco to peppers.

It is also advisable not to grow peppers after other solanaceous crops (such

Bell peppers prefer deep, fertile, well-drained soils.

as tobacco, tomatoes, potatoes, and brinjals) or vine crops for a period of three years because all of these crops are susceptible to the same diseases. Peppers do extremely well following fescue sod.

Use a soil test to determine fertiliser and liming requirements. Peppers grow best at soil pH between 6.0 and 7.0. Adjust the soil pH to near neutral (pH 5.5-6.0) for maximum yields. To reduce the risk of Verticillium wilt and other diseases, avoid using fields in your rotation in which eggplant, tomato, pepper, potato, and strawberry, or caneberry have been planted.

Land preparation

Avoid growing peppers on the same soil more often than once in 3 or 4 years. As tomatoes and peppers are subject to the same diseases, neither should follow the other in successive seasons in the same soil. Soil used for plant beds should have had no peppers grown in it for 4 or 5 years, preferably never before.

Planting

Greenhouse peppers are sown in October through February for harvest of



fruit approximately five months later in March through July.

The exact time to maturity varies depending on the variety of pepper. Most sweet peppers mature in 60 to 90 days after planting; hot peppers can take up to 150 days. Keep in mind, however, that the number of days to maturity stated on the seed packet refers to the days after transplanting until the plant produces a full-sized fruit.

Spacing

Although much of the greater part of the total area of all kinds of peppers is grown from transplants, seed can also be sown directly in the open field, principally

in some of the warmest parts of the country. Ten to 12 seeds can be planted 45 cm apart on rows that are 75 cm apart and later thinned to 2 plants per stand when 8 to 10 cm tall. One hectare requires 100 to 200 g of seeds. The costs of production by direct sowing are nearly the same as those by transplanting, because of the cost of more seed, thinning, and additional cultivation to control weeds.

Direct sowing is not generally recommended, even in places where the season is long enough to permit its use. The seedbed for raising seedlings is made 120 to 150 cm wide and as long as is necessary. The soil is pulverised by forking and breaking up the clods

.....
Land preparation should be done properly

and removing stones and straw.

Fertilisation

Windmill's basal fertiliser Super C (6:24:20 8S 0.1B) should be applied at a rate of 500 kg per hectare at planting. At 5, 10 and 14 weeks after transplanting, apply as top dressing 200 kg/ha of Ammonium Nitrate, 150 kg/ha of Muriate of Potash, 300 kg/ha of compound J (14:6:20), and 100 kg/ha of Calcium Nitrate.

Irrigation

Many growers of fresh-market peppers plant the crop under black plastic mulch with trickle irrigation under the plastic. This provides uniform moisture and fertilisation during the growing season.

Dry conditions result in premature small-sized fruit set, which leads to reduced yields. Sweet peppers have a total water requirement of about 600 mm and a weekly water requirement of 25 mm during the first five weeks and 35 mm thereafter.

Excessive rainfall or wa-

ter supply can negatively affect flower and fruit formation and eventually lead to fruit rot. Unrestricted water supply to the crop can be as harmful as inadequate water. Root rot diseases can be caused by waterlogged conditions that last for more than 12 hours. Therefore, drainage of the field is very important. If plant growth is slowed by water stress during flowering, flowers and immature fruit are likely to drop off.

Irrigation is essential in arid and semi-arid regions to provide enough water for pepper production. Furrow irrigation is well known as a major factor favouring conditions leading to the development of diseases like bacterial wilt. Drip irrigation is one method of water application that optimises water supply for pepper production and conserves water in arid regions. Drip irrigation with cultural practices like mulching generally leads to additional yield increases. Drip irrigation allows for frequent application of low levels of soluble nutrients to the root zone (fertigation). The control over the root environment with drip irrigation

is a major advantage over other irrigation systems. Sprinkler irrigation requires good quality water. However, this type of irrigation is likely to make bacterial diseases more of a problem through splashing.

Weed control

Good weed control in peppers should start before the crop is planted. Control established perennial weeds before planting peppers in the field. Use cultural, mechanical, and chemical weed control techniques in a coordinated manner to reduce the risk of interference with the crop. Plastic and organic mulches control weeds effectively. Higher plant density can also smother weeds. Shallow cultivation will help to avoid root damage especially around young plants. Weeds growing up through the planting holes of plastic mulch can be a particular problem. Recommended herbicides include Command 4EC, and Paraquat/Agriquat. For Nustedge control, apply Basagran 480 EC.

Pest control

Aphids

Aphids can make pepper fruit unmarketable because of the honeydew that is secreted by the aphid and/or associated sooty mould fungi. Infested plants can be stunted, with deformed foliage. Green peach aphids are variable in colour and have a wide host range. Aphids overwinter as eggs on crop residue or host plants.

The winged forms which are less frequently found than wingless forms, enable the insect to move into new areas. Females can reproduce without mating with males. Aphids are generally most abundant from mid-summer through October. Their severity is greatly influenced by weather patterns.

Greenhouse infestations of transplants can be minimised by practising good greenhouse sanitation. Controlling weed hosts around the edges of fields may help to control aphid infestations. Crop debris should be destroyed as soon as possible soon after harvest.

European corn borer

European corn borer larvae tunnel into and feed on fruit, causing direct damage, premature ripening, and entry points for fruit-rot pathogens. Infested fruit may appear unaffected on the outside but are damaged internally. Cultural control is achieved by locating pepper fields as far away as possible from maize fields. Eliminating weeds around field edges will make pepper fields less attractive to ovi-positing females. Post-harvest control practices include destruction of pepper residues and ploughing in the fall to destroy overwintering larvae.

Mites

Mite feeding damage

is expressed as downward curling of leaves, giving an inverted spoon shape and suppression of lamina development of young leaves, and causing the leaves to become narrow. Affected leaves develop a bronze appearance, especially on the lower side, and they become thickened and brittle.

Heavy infestations may kill off the apical meristems. Fruit develop a rusted, corky surfaces and may be distorted. Weeds, e.g. nightshade that serve as hosts for the mites, should be controlled to reduce infestation. Several insecticides provide effective control of mites. The recommended chemical

A good pest management programme is key.

control is Imidacloprid 200SL.

Thrips

Thrips damage includes distortion and upward curling of leaves, developing a boat-shaped appearance. The leaves become crinkled and the lamina may be reduced, resulting in narrow leaves. The lower surface of the leaves develops a silvery sheen that later turns bronze, especially near the veins. Damaged fruit is distorted with a network of rusted streaks. Control measures include the use of resistant cultivars and mulching with plastic. Apply Fenveralate 20 EC, Lambda 5 EC, Thionex 50 WP, or Decis 2.5 EC to control thrips.

Cutworms

Cutworms can be controlled with Decis 2.5 EC, Fenveralate 20 EC, or Lambda-Cyhalothrin 5 EC.

Disease control

Bacterial leaf spot (*Xanthomonas campestris* pv. *vesicatoria*)

Bacterial leaf spot is

the most economically significant disease of peppers. The causal bacterium infects both pepper foliage and fruit. Leaf spots first appear on the undersides of leaves as small, irregular, water soaked areas. The spots grow large, become purplish-grey with black centres, and may have a narrow, yellow halo. Affected leaves become ragged, turn yellow and drop off. Spots on fruit are like blisters, becoming rough and cankerous and often extending into the seed cavity, predisposing the fruit to secondary pathogens. Loss of foliage also predisposes the fruit to sunscald. An increasing number of resistant varieties with good horticultural characteristics are becoming available to producers. Also practise a two-year rotation away from tomato and pepper crops.

Seed should be certified and disease-free. A seed treatment using bleach may help provide control. Good field sanitation should be practised to minimise the spread of the disease. Planting disease-free transplants is a key step in managing this disease in the field. Most growers have

switched from overhead irrigation to drip irrigation in part to minimise the spread of Bacterial leaf spot (BLS). Crop debris should be destroyed as soon as possible soon after harvest to prevent disease carry-over to other plants and to initiate decomposition. Apply Copper Oxychloride 85% WP to control Bacterial leaf spot.

Powdery mildew

The symptoms are chlorotic spots on the upper leaf surface. Numerous lesions may coalesce, causing chlorosis of the leaves. Lower leaf surface lesions develop a necrotic flecking and generally, but not always, are covered with a white to grey powdery growth. It progresses from older to younger leaves, and leaf shedding is a prominent symptom. The disease is promoted by warm weather (dry and humid). Fungicides are used to manage the disorder. Wettable Sulphur, Benomyl 50 WP, Nimrod, or Shavit 25 EC are all effective remedies.

Anthracnose

Anthracnose can be

controlled with Dithane M 45 or Copper Oxychloride 85 WP.

Physiological disorders

Blossom-end rot

Blossom-end rot (BER) is a common disorder of greenhouse peppers, with the symptoms occurring in the pepper fruit. The disorder is associated with a number of environmental stresses as well as calcium deficiency. Any condition which causes water stress or a reduction in transpiration, and resultant movement of nutrients through the plants can cause symptoms to develop. Lack of water, fluctuating soil water conditions, damage to the root system, and high electrical conductivity in the root zone can cause blossom-end rot. An actual calcium deficiency to the plant is rarely the primary cause of the disorder as BER can develop when adequate levels of calcium are being fed to the plants. The environmental factors that can trigger the disorder interfere with the movement of calcium within the plant, causing less calcium to reach the fruit. Some

cultivars are more prone to this disorder than others.

Symptoms of blossom end-rot begin as soft spots on the fruit, which develop into sunken, brownish to tan lesions with a very distinct border between affected and healthy tissue. The spots usually occur on the bottom third of the fruit and are not strictly confined to the bottom, or blossom end of the fruit. Affected fruit is unmarketable. Control is obtained by avoiding conditions of moisture stress or conditions of reduced transpiration in the crop. Simply ensure that the plants receive adequate water and that the vapour pressure deficits (VPD) targets are met. Weekly foliar applications of calcium nitrate can have a significant impact on reducing the occurrence of BER. Apply Calcimax foliar sprays to correct calcium deficiencies.

Fruit cracks

This condition is characterised by the appearance of very fine, superficial cracks on the surface of the pepper fruit, which gives a rough

texture to the fruit. The development of these cracks is associated with sudden changes in the growth rate of the individual fruit. The appearance of fruit cracks can follow periods of high relative humidity (over 85%), changes from hot, sunny weather to cool, cloudy weather or vice versa. Maintaining a consistent, optimised growing environment is the best way to prevent the development of fruit cracks.

Fruit splitting

The development of large cracks in the fruit is a direct response to high root pressure. Factors that contribute to the development of high root pressure directly impact on fruit splitting. Ensure that optimal vapour pressure deficit (VPD) targets are met at all times. Adjust the timing of the last watering in the day so as not to water too late. Eliminate any night-watering cycles.

Fruit spots

The appearance of small, white dots below the surface of the pepper fruit is associated with excess calcium levels in

the fruit and the subsequent formation of calcium oxalate crystals. Conditions that promote high root pressure will also favour the development of fruit spots.

Misshapen fruit

The development of misshapen fruit is generally associated with suboptimal growing conditions at flowering and pollination, which result in poor flower development or poor pollination. Ensure that optimal environmental conditions are met and maintained to reduce or eliminate the development of misshapen fruit.

Harvesting

Yields of 6 to 10 ton/ha of bell peppers may be obtained for processing. Fresh market yields may range from 500 to 1 000 cartons (12 kg) per hectare. When using appropriate plastic culture techniques, yields of 1 428 cartons (12 kg) per hectare have been reported. Pimiento and dried chilli pepper yields range from 1 to 2 ton/ha. Pepper yields are greatly influenced by the number of harvests and season. As peppers

mature, their walls thicken. Pick peppers when the fruit is firm and well coloured. In some areas, bell peppers are generally hand harvested as green mature fruit. For the fresh market, or when the fruit is to be stored, peppers should be cut cleanly from the plant, using a hand clipper or sharp knife, leaving about a 2 cm section of the pedicel (stem) attached to the fruit. A clean cut is important as such cut surfaces heal more quickly. This reduces incidence of decay in storage and during transport to the market. Care should also be exercised to ensure that the stems do not cause puncture wounds in harvested fruit.

Maturity is determined when the fruit is smooth and firm to the touch (it is a function of wall thickness). Bell peppers for the fresh market must also be 8 cm in diameter and not less than 9 cm long. They can also be harvested red, which are considerably sweeter and more flavourful. Mature yellow, orange and purple bell peppers, together with red bell peppers represent a generally high-value product in fresh market chan-

nels. Cherry peppers are machine harvested most successfully. Cherry types are harvested as both green and red fruit and the banana types are generally harvested as yellow, mature peppers. Jalapeño and some cherry peppers have been machine-harvested successfully in other areas. Machine harvesting may be successful with other types, especially where the peppers are intended for processing.

Harvesting Methods

Peppers are generally broken off from the plants with the stems left attached to the fruit. For sweet peppers, strong cloth picking bags which are suspended from the shoulders of the pickers are preferable to baskets or boxes. This frees both hands for rapid and careful removal of the fruit from the plants. Picking in containers that have hard and rough surfaces may result in damage to the peppers.

For more details please contact Windmill Farming Solutions.

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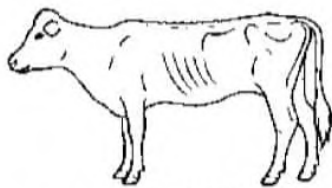
Crop Planting Calendar (Zimbabwe)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beet Root												
Brinjal (egg plant)												
Broccoli												
Butternut												
Cabbage												
Carrots												
Cauliflower												
Chillies												
Green beans												
Green mealies												
Lettuce												
Marrow (baby)												
Onion												
Peas												
Peppers												
Potato												
Squash												
Squash (germ)												
Squash (marrow)												
Tomato												
Water melon												



Cattle Body Condition Scoring

- Body scoring is very important in assessing the health status of an animal.
- A low score may indicate diseases or improper feeding while a high score may indicate a high probability of breeding and metabolic problems.



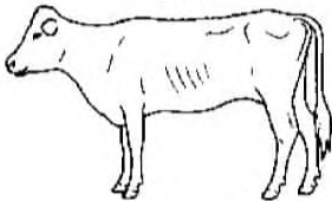
Body score 1

BODY SCORE-1

- Extremely thin. No fat in brisket or tail docks.
- All skeletal structures are visible.
- Dull hair
- May be diseased and survival during stress is doubtful



Cattle with body score 1



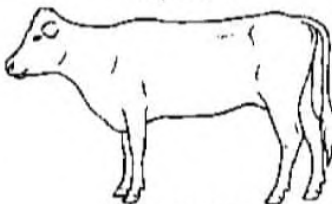
Body score 2

BODY SCORE-2

- Thin. Vertebrae, hips and pin bone prominent.
- Some tissue cover around tail dock, hip bones and the flank.
- Muscle tissue evident but not abundant, health may be OK.



Cattle with body score 2



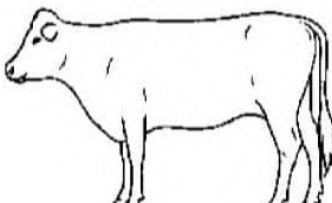
Body score 3

BODY SCORE-3

- Ribcage only slightly visible.
- Fat deposit behind shoulder obvious, ideal condition for calving.
- Fat deposit in brisket area.
- Hook and pin bone visible, but not prominent.



Cattle with body score 3



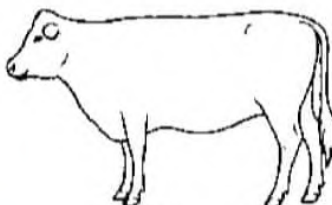
Body score 4

BODY SCORE-4

- Skeletal structure difficult to identify.
- Obvious fat deposits behind shoulder and tail head.
- Flat appearance to the top line.
- Folds of fat starting to develop over ribs and thighs.



Cattle with body score 4 may have metabolic problems at calving.



Body score 5

BODY SCORE-5

- Animal is obese, flat appearance dominates.
- Brisket is heavy and bone structure not noticeable.
- Tail head and hip bones completely buried in folds of fat.
- Back is flat and completely covered by fat.
- Mobility impaired by large fat deposits.



Cattle with body score 5 and above have high probability of metabolic and breeding problems.





Stock theft Prevention

Farm animals are not only business assets that give you income, but they become part of your family. The time and resources you have invested in acquiring and keeping them healthy have, by now, created an emotional attachment to them. It is heartbreaking that many livestock producers in the country lose thousands of dollars from theft by rustlers annually. The premium prices offered for livestock have resulted in increased stock theft cases.

Here are tips to ensure the safety and traceability of your animals.

Count animals

Animals are counted regularly to identify and detect potential losses. The frequency

More Information

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depends on the size of your herd and should not exceed weekly, though we highly recommend daily counting. Counting is best done by the owner or someone they can trust. As you count, check for any signs of injury that could have resulted from attempted theft. Report any missing livestock to the police immediately.

The longer you wait, the harder it gets to follow-up evidence and catch the thieves. This means, you need to have the contacts of your local police ready. Also, report stray animals to the police and community. Thieves have implicated innocent livestock owners

in some cases where they have used their pens to store stolen animals.

Keep fences and gates well maintained

Install pens and paddocks away from the main road and closer to the residence as possible. Secure all gates with strong-quality locks. Exposed hinges can easily tap off with a couple of hand tools, so it's worthwhile to get into the habit of capping them. Also, regularly inspect for damage or weak links that might allow someone to get through. Steel pens are more secure, though expensive.

Use of Technology

Tech companies have

developed a system that tracks animal location. The Livestock Identification and Traceability System (LITS), a plastic chip inserted in the ear of an animal and capable of storing electronic data and linked to a server. The system enables users to establish the movement, ownership and health history of an animal as well as its location at any given time. It has been successfully used regionally in South Africa, Botswana, and Namibia.

Be observant

If anything seems amiss, trust your gut. For instance, if you see signs that someone might have been on the property or kraal, such as footprints or tire tracks near the perimeter, take extra precautions. The same goes for if you notice any suspicious vehicles making repeated visits or slowing down near your land.

Insurance

Ensure animals are insured against theft. Remember, your livestock is your working capital, they need replacement when losses occur.

Security guards

Employ security guards to patrol your paddocks and kraals. Ensure they are well-equipped to apprehend or scare away rustlers.

Employees

Some stock theft cases involve farm assistants. Always keep an eye on them. Before hiring assistants, get them cleared by the Zimbabwe Republic Police. Train your assistants to watch for irregularities and not to share information about your farm business with strangers. Do not allow loitering or harbouring unemployed people on the farm. All visitors and strangers should get your permission. Keep a recording system for visitors, including their addresses, dates of the visit and duration, contacts, who they are visiting and why.

Stock register

A stock register is a must. It keeps details of your animals, including, age, date of birth, dam, sire, description, source and health history.

Branding

Whether you use a brand, tattoo, or tag system, marking your animals can be a powerful deterrent. Most thieves will pause before stealing animals clearly marked as someone's property. The reason: Markings are fairly easy to identify, which not only makes the animals difficult to sell but also puts the rustlers at a much higher risk of association with crime. Branding has been the best method used by farmers for thousands of years. The Livestock Identification Trust

can assist you in registering your brand.

ZRP Anti Stock Theft

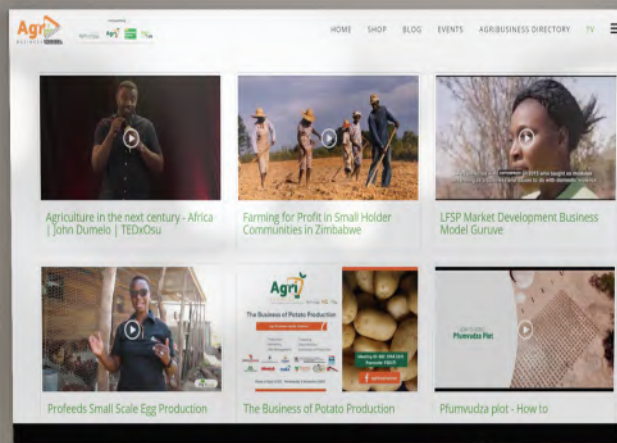
The Anti-stock Theft Unit came in 2004 after realizing a need to build a national herd that follows the government's policy of reviving the national economy. Historically, livestock has been the source of an African man's pride. Cattle are a symbol of wealth; they provide draught power as well as generate much-needed foreign currency through beef exports.

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Q

I am planning to set up a poultry farm. What are the key considerations?

A

Accessibility

The poultry farm itself should be easily accessible and well protected. The location of the poultry units should take into account of prevailing winds. Excessive winds may introduce drafts, which are not desirable. The terrain also should be such that it will not adversely interfere with the construction of houses. Other points to take note are described below.

The poultry farm/site must be reachable at all times. Feeds and chicks will need to be delivered at various times during the year, while finished products such as eggs and birds for slaughter will be taken off-farm. It is therefore important that an all-weather road should serve the farm.

Electricity

Many poultry operations require electricity for are lighting, artificial ventilation and refrigeration.

Large scale operations will need to use automated feeding systems, these require electrical power.

Thus, a power supply is quite critical. It may be necessary that a step-down transformer be on the farm or somewhere

close to it.

Biosecurity and disease control

Wheel and foot dips must be provided at the entrance to the farm. Vehicles and people coming to the farm from outside may be carrying some germs. These need to be eliminated at the entrance. An all-in–all-out system is strongly recommended as it minimizes the risk of disease carry over and cross infections of flocks.

Location in relation to other poultry farms/units

The farm or unit must be far away from other poultry farms. The minimum distance from the nearest farm should be 3 km for layers. However, for single age units or broiler units, the minimum distance between farms could be as low as 1 km. Thus, avoid multi-age sites or units in order to minimize the risk of cross infections from neighbouring farms or units.

Water supply

There should be a reliable, clean water source.
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