

Dear Reader,

The month of July is characterized by cold weather, and this comes with challenges in the farm. It could be pneumonia in live-stock especially goats and sheep or affected crops. Bean anthracnose is a common disease in this season. Your chickens might also show a reduced egg production. This July Edition comes with detailed advice and information from experts on how to navigate these challenges presented by the July-cold weather.

As a consumer, there are those moments when you purchase vegetables and fruits whose source you are not sure about. Awareness on how to wash out toxins from your vegetables and fruits is essential in ensuring safety of the food you feed your family. In this issue, we feature techniques you can use to wash away most toxins and contaminants from your fresh produce. Also read on to find out ways in which to differentiate adulterated honey from pure honey.



Crop pests and diseases in the cold season

By Grace Kinyanjui

It's the onset of a cold season, which usually starts late June and ends October. Most farmers consider this season as the period to wind down their routine pest management practices. This is because the population levels of most insect pests decrease remarkably. Examples of such pests include aphids, whiteflies, thrips, spider mites, mealy bugs, fruit flies, leafminers, tomato leaf miner, cutworms, bollworms, stem and grain borers, fall armyworm and cabbage worm. A greater number of these insect pests have reduced activity in the cold season. Generally, insects are cold blooded and thus their body temperature is largely influenced by their surrounding environment. Cold temperatures usually decrease their rates of metabolism. As a result, they are less active and consume very little food. Their rates of growth and development as well as reproductive capacity are also slowed down. This explains why levels of pest's infestation and damage on most crops are minimal during the cold season. Sometimes, there are instances of rainfall, which wash away insect pests that attach to the leaves. These are mostly the plant-sucking pests such as

aphids, whiteflies, mealy bugs and spider mites. Therefore, you are not likely to see large numbers of these insect pests during the cold weather.

Contrary to the common belief that all pests die in the cold season, most insect pests have the ability to survive cold temperatures. Adults usually hide on the underside of leaves and lay eggs. Frequent periods of sunlight speed up the rates of growth and development, and also prompt these pests to emerge and thrive. Leaf-eating caterpillars and cutworms are particularly very active in the cold season. In addition, non-insect pests such as slugs, snails, beetles, millipedes and termites continue to cause significant damage to crops. Slugs and snails are especially very aggressive and feed on leaves of young vegetables. For all the farmers practising greenhouse farming, crop protection measures should be applied as usual. This is because the temperatures in the greenhouses are warmer and favourable for pests' growth and development.

Farmers should also be on a high alert as cold and humid weather conditions favour the growth of plant pathogens such as fungi and fungus-like organisms. These pathogens cause crop diseases such as downy mildew and botrytis gray mold which mainly affect crops such as beans, carrot, celery, eggplant, onion, pepper, squash and tomatoes. Young seedlings of most crops become susceptible to damping-off diseases. Potatoes and tomatoes are also heavily affected by early and late blight.



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Crop protection measures in the cold season:

- Although pests' challenges are minimal, farmers should inspect their crops regularly to avoid rapid buildup of populations and serious infestations. Special attention is required on the underside of leaves. Early infestations can be treated using homemade extracts such as neem, garlic and soap sprays. Commercial Bt (*Bacillus thuringiensis*) products are also effective against leaf-eating caterpillars. Pest management of early infestations prevents further spread and possible economic losses.
- Crop damages by slugs and snails can be reduced by good field sanitation practices. This involves the removal or burying of crop residues, which are used as hiding and egg-laying sites.
- Fungal diseases can be prevented by ensuring proper aeration of the crops. This can be achieved by decongesting the overcrowded crops. Removal of crop debris also limits the spread and proliferation of these diseases. In cases of attack, farmers are advised to use copper-based fungicides, which are commercially available in Kenyan agrovets. Examples include Sulcop 50 DF (Osho Chemical Industries Ltd), Isacop 50WP (Twiga Chemicals Ltd) and Demildex 50WP (Bio-Medica laboratories Ltd). Garlic extracts can also be used against downy mildew.
- Farmers should also ensure that their greenhouses are well ventilated to minimize the risks of diseases.

In conclusion, regular scouting of crops should be the custom for all farmers during this cold season. This will enable them detect the early symptoms of pests' attack or diseases, apply prompt control measures and prevent severe crop damage.

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https://infonet-biovision.org/natural_pest_control



Cultivate onions for health and wealth

Josephat Chengole Mulindo

There are two broad categories of onions; bulb onions (bulb is the edible part) and spring onions (leaves are the edible part). Bulb onions are the most widely grown and consumed. They are categorized into various types by colour and variety. They store for longer, fetch higher prices and have wider cuisine applicability. Hybrid bulb onions are higher yielding than the non-hybrids. Production of onions generally starts from seed. However, they can be grown from seedlings or sets (immature smaller bulbs).

Conditions for onion production

Soils: Onions perform better in well drained, fertile, sandy loam, non-compacted soils. The ideal soil pH is 5.8 to 6.8. The pH range creates conditions suitable for onions to take in macronutrients.

Climate: The ideal temperatures for onion growth are between 13 - 35 degrees centigrade. Lower temperatures (below 13°C) make bulb onions produce seed and more susceptible to diseases. Higher temperatures (above 35°C) hasten maturity resulting in small-sized bulbs. Rainfall of between 500 -700 mm during the growth period with good distribution is adequate. Rainfall below 500 mm requires irrigation - preferably drip or furrow irrigation but not overhead or sprinkler irrigation to avoid the associated onion diseases. Too much rainfall creates waterlogging literally "suffocating" the bulbs. Towards the maturity stage, drier conditions are welcome. This therefore, means that, the right period to plant bulb onions in Kenya is during the short rains season - the exact time in the season is a marketing issue that will be highlighted later.

Altitude: Onions are versatile enough to survive from sea level to 1900 metres above sea level. A part from the few very cold areas and the very dry hot areas, much of the Kenyan land-mass is an onion producing region.

Bulb onion nursery establishment

Choose the nursery site as close to the planting land as possible. This will minimize the shock of transplanting and cut down on labour costs. The nursery should be 100cm width but the length can be as long as convenient. Dig up the soil and break the clods into a good texture. This can be done twice over a period of at least two weeks. One week to planting, mix the soil with well decomposed compost manure. One 10-litre bucketful of manure should cover one square metre of soil. Raise the beds slightly above ground level to protect the seeds from surface runoff. Make 1cm deep furrows 15cm apart. Mix sand with seed then drill them in the furrows. Cover them lightly with soil. Irrigate then cover the bed with mulch. 1 kg of seed will produce enough seedlings for one acre of land. On the tenth day, all the seeds would have germinated. Remove the mulch and use it on a raised overhead cover. Irrigate regularly and manage weeds by carefully uprooting them. After six weeks, the seedlings will be ready for transplanting. At this stage, they are pencil size in thickness, 10 to 15cm tall and have 3-5 true leaves.

Transplanting bulb onions

Land preparation should start on the day the seeds are planted in the nursery. Select virgin land or land whose last two crops were not onions or close relatives such as garlic and leeks. Plough the land deeply. Re-plough 2 weeks later. Harrow to break up lumps of soil. One week to transplanting, broadcast well decomposed compost manure at the rate of 15 tons per acre. Then by use of a hand hoe, work the manure

into the soil. Make level and smoothen the soil surface. A day to transplanting, irrigate the land if it does not rain.

Transplanting should be done early in the morning (6:00 to 10:00 am) or late in the evening (4:00 to 6:00 pm) to minimize stress. Two hours before transplanting, water the nursery for easier pulling out of the seedlings. Excavate holes 2.5 cm deep and 8 cm apart in a row and 30 cm apart between the rows. Cut off 50 percent of the green tops to hasten take-off. Then place the seedling in the hole and cover it to the level it was in the nursery soil.

Field management

Weeding: Weeding should be done at least twice to keep the onion field consistently weed-free. This should be done by use of a hand hoe or by uprooting the weeds.

Irrigation: Start irrigating the onion field the next day after transplanting if it does not rain. This should be done once weekly until six weeks to harvesting, depending on the rainfall conditions. Onions do not like dry soil conditions. They make the bulbs to split, lowering their grade.

Unearthing: This is done during the second or subsequent weeding. It involves loosening and removal of soil around the bulb to allow it to develop well. It also facilitates the colouring of the bulb. While unearthing, be careful not to expose the roots.

Pest and disease management: Onion thrips and onion flies are the major onion pests. To manage them, [1] Keep plants well irrigated since water stressed plants are more susceptible to thrips damage, [2] Maintain weed-free plots [3] Strictly use well decomposed compost manure [4] Neem extracts can be sprayed on attacked plants [5] Practice crop rotation.

The major bulb onion diseases include: Downy mildew, purple blotch, rust, pink root and neck rot. They can be managed through: [1] Use of tolerant varieties, [2] field hygiene, [3] crop rotation, [4] proper agronomic practices, [5] proper postharvest handling.

Harvesting and curing

Four months after transplanting, the onions should be ready for harvesting. Harvesting should be done during the dry period. Leaf tops begin to discolour, dry and bend towards the ground. A shiny membranous cover develops around the bulbs. Curing of the onions is done by uprooting every single stem and leaving it on the ground for 2 weeks to dry after which leaves and roots are cut off with a sharp knife. The main objective is to prolong shelf life by preventing moisture loss and attack by postharvest diseases. If by bad luck rains happen at harvesting time, protected curing rather than field is done. The uprooted bulb onions are placed and left for 3 weeks in a warm, dry and well ventilated location protected from direct sunlight and rain.

Post-harvest handling

Onion sorting: Before storage, onions are sorted to remove: [1] Onions with thick necks [2] Injured onions [3] Decayed onions and [4] Doubles and small bulbs. Apart from decayed onions, the others can be sold at a lower price in the market.

Onion grading packaging: Locally, onions are segregated into three categories: large, medium and small (grades 1, 2 and 3 respectively). The different grades are then placed in separate nets for storage. On average, one acre would yield 24 tonnes of marketable bulb onions.

Onion marketing

Half of the onions marketed and consumed in Kenya originate in Tanzania. This is a clear indication that there is a supply gap of onions in Kenya. After harvesting, onions can stay for up to six weeks. Onions from Tanzania flood the Kenyan market between April and July. As a Kenyan farmer, the best time to have the onion produce in the market is mid-January to mid-March or August to September. Having the product in the market in the August-September period implies that production was done in the long rains which is not advisable. The best period is thus mid-January to mid-March. Therefore, the best period to transplant onions in Kenya is from mid-September to mid-November. Transplanting outside this window of opportunity would subject the producer to unfavourable competition and therefore lower producer prices.

Generally, prices of bulb onions in Kenya oscillate between kshs 40 to kshs 80 per kg. Grades 3 and 2 are sold to individual consumers. Grade 1 is preferred by institutions because of the sheer large size of the pieces.

Gross margin analysis

Gross margin analysis for one acre of bulb onions

Yield (kg of bulb onions)	24,000
Price (ksh per kg of bulb onions)	40
Total Income	960,000
Labour (nursery preparation and planting)	2,500
Cost of seeds 1kg @21,000	21,000
Land preparation costs (2 ploughings) @3500	7,000
Land preparation costs (harrowing) @4000	4,000
Land preparation (levelling and smoothing land) 6 people @300 for 2 days	3600
Compost manure 15 tons @2000	30,000
Transplanting (labour) 10 people @300 for 1 day	3,000
Weeding x 2 (labour) 10 people @300	6,000
Wages (Farmhand) @10,000 for 4 months	40,000
Harvesting and curing: 6 people @300 for 2 days	3,600
Sorting, grading and packaging: 10 people @300 for 2 days	6,000
Packaging material	10,000
Miscellaneous (transport, storage etc. costs)	13,600
Total variable costs	149,700
Gross margin	810,300

With a gross margin of kshs 810,300, bulb onion production comes across as one of the high value enterprises a farmer can engage in.

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<https://infonet-biovision.org/PlantHealth/Crops/Onion>



Bean Anthracnose Disease

By Charei Munene

Bean anthracnose is a seed-borne disease caused by the fungus *Colletotrichum lindemuthianum*. This disease causes severe losses to bean farmers in Kenya. The fungus infects leaves, stems, and pods of common bean plants, especially in the cold season, often killing the bean plant at a young age. This disease can make a farmer lose everything in some cases.

Life cycle of the disease:

Bean anthracnose survives between crops in infected crop residue and can be spread in seeds, air, and water. Infected points (which appear as characteristic sunken spots) begin producing spores 2-4 days after infection. New plant infections are favored by temperatures of 13-26° C and relative humidity greater than 92 percent (or free moisture). Frequent, moderate rainfall, particularly if accompanied by winds or splashing rain favours disease development.

Symptoms and signs

The most characteristic symptom of the disease is the black-red sunken spots that develop on infected pods.

On seedlings grown from infected seed, symptoms start as small dark brown to black spots on the seed leaves. Light brown-colored specks appear and enlarge along, and sometimes around, the stem. If the spots grow completely around the stem, the seedling is killed. The spots become sunken and are filled with a characteristic ooze which consists of millions of spores.

On established plants, the veins on the underside of the leaves and the petiole can become infected with brick-red to purple spots that soon turn dark-brown to black. Spots may

sometimes occur on the upper sides of leaves.

On the pods, symptoms begin with small light brown colored spots. The spots progress to black-red sunken lesions surrounded by a slightly raised black ring with cinnamon-colored border. In the center of the spots, there is often a tan colored ooze, which consists of millions of spores. Often the ooze dries to gray-brown to black granules. These are still very infective. The pods may then shrivel and die if infection is severe.



Figure 1: Pods displaying bean anthracnose symptoms

On the seeds, large or small yellowish-brown sunken spots may form, which turn brown to black.



Figure 2: Seeds displaying bean anthracnose symptoms

How do you prevent anthracnose in beans?

1. Always allow beans to dry completely before touching or bean planting.
2. Plant cultivars of bean that are resistant to anthracnose.
3. Always clean the tools you're using in the bean farm before using them elsewhere.
4. Do not plant beans for at least 2 years in land that has carried an infected crop. Rotate with non-host crops such as maize.
5. Uproot diseased plants to reduce the spread of the disease.
6. Avoid cultivating and harvesting an affected crop when wet, to prevent the spread of spores.
7. Use furrow rather than sprinkler irrigation because of the importance of water for disease development.
8. Do not pack lightly diseased pods as anthracnose can develop during transport.

How to control bean anthracnose

1. Do not compost infected leaves, fruits or stems, incorporate clean crop debris into soil after harvest to hasten decomposition.
2. To avoid spreading the disease, keep out of farm when plants are wet and make sure to disinfect all garden tools.
3. Neem oil can help prevent this fungal disease from developing on the surface of leaves or stems. Neem oil is an organic, multi-purpose fungicide/insecticide/miticide that kills eggs, larvae and adult stages of insects as well as prevents fungal attack on plants. Apply early, at the first sign of budding, every 7-14 days as a preventative measure or on a 7-day schedule until existing problem is eliminated. Neem oil also reduces the population of aphids and other pests which may carry spores to your plants.
4. Another good product that can help prevent/control anthracnose disease is Serenade Garden. This product is an organic fungicide that uses *Bacillus subtilis* to kill off fungal growth. It's quite effective against most strains of anthracnose. For best results, treat prior to disease development or at the first sign of disease infection. Repeat at 7-day intervals or as needed.

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<https://infonet-biovision.org/PlantHealth/Crops/Beans>

What you need to know about Pneumonia in sheep and goats

By Nelson Barasa

Pneumonia is an inflammation that affects lungs and surrounding tissues and is one of the common conditions that affects sheep and goats. It is commonly caused by infectious agents, that is bacteria and virus. Common viruses that cause pneumonia include *Parainfluenza virus type 3*, and *Adenovirus* while common bacteria that cause pneumonia include *Pasteurella*, *Mycoplasma*, and *Chlamydia*.

Pneumonia caused by bacteria and virus can be acute and highly contagious. This means that when animals of a flock are affected by this type of pneumonia, the mortality rate is high and those that survive suffer long-time effects on their growth and development.

Pneumonia can also be caused by non-infectious agents such as Parasites (Lungworms) and aspiration from **incorrect drenching**. Lungworms (*Mullerius sp*) is acquired when animals graze in pastures infested with the larva of the worm. Snails and slugs are the common vectors of this parasite.

Young animals are at high risk of getting pneumonia especially when subjected to stress.

Common stresses that predispose sheep and goats to getting pneumonia include:

- Overcrowding,
- Animals being kept in poorly ventilated houses,
- Transportation stress,
- Dust and sudden change in climatic weather (common in cold weather),



- Poor nutrition.

Sheep and goats with pneumonia may be more susceptible to heat stress and heat stress may exacerbate clinical signs and disease progression for animals with pneumonia.

Clinical signs

Common signs noticed in animals affected with infectious pneumonia include:

- Depression and reduced appetite,
- Rapid shallow breathing which progressively becomes difficult breathing,
- Nasal discharge,
- Fever,
- Prolonged forced coughing in young sheep and goats can sometimes lead to prolapse of rectum,
- Weak lambs and kids can die within 24hours,
- Sometimes animals may die without showing any clinical signs.

Diagnosis

Diagnosis is done based on clinical signs, postmortem and laboratory examination of the samples. It is important to consult with a registered animal health practitioner, any time you

notice the above signs.

Treatment

The earlier the diagnosing and treatment the higher the chances of avoiding lung damage and death. Those animals that are treated after they already suffer from severe breathing problems may die or take much longer to recover and may not return fully back to normal and often become stunted.

Consult your local veterinarian for advice on the best treatment protocol.

Prevention of pneumonia in sheep and goats

- Avoid exposing the animals to stress factors mentioned above.
- Goats should be routinely vaccinated against *Mycoplasma* (Contagious Caprine Pleuropneumonia).
- Do routine deworming to control worms.

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How to distinguish pure honey from adulterated honey

Honey is mostly applied on bread or added to tea as a sweetener. As concerns about the safety of food products in the market rise, it is important to know ways in which to distinguish pure honey and honey that is impure either because it has been diluted for increased quantity or sweetened with unhealthy additives. Here are some of the tips you can use to check the quality of honey and determine whether it is safe for consumption or not.

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How to remove toxins from vegetables and fruits

- Pure honey lacks expiry date this is because it does not go stale unlike adulterated honey.
- Pure honey sticks when put inside a container and should have a stretching effect when a finger or a spoon is immersed inside and pulled out.
- Pure honey should be able to ignite fire when rubbed on a match stick. Adulterated honey might not show consistent results or burn properly, due to the fact that moisture or fermentation might affect its quality.
- Adulterated honey will easily dissolve when put in a glass of water while pure honey will settle right at the bottom.
- Pure honey should stick onto the surface applied while adulterated honey spills or trickles down a surface.
- When pure honey is poured on a white cloth or a blotting paper it does not get absorbed or leave stains unlike adulterated honey which will be absorbed and leave stains on the surface.
- Mix honey with 2-3 drops of vinegar essence. If the mixture foams up it is likely that the honey may be adulterated.
- Heating pure honey will make it caramelize quickly and it will not become foamy unlike adulterated honey which will not caramelize and become bubbly on heating.
- Pure honey does not separate into layers.
- Pure honey should be free from any additives.
- A weird taste does not mean that the honey is not pure this is because there are different varieties of honey made from the nectar of different flowers and even the secretions of sap eating insects.

- Soak the fruits in water for longer periods preferably overnight.
- Soak fruits and vegetables into a baking soda solution for a period of 15-20 minutes then wash thoroughly with running water. Baking soda has an alkalizing nature therefore helps in removing almost 98 percent toxins and pesticide residue. Avoid soaking berries since they may get damaged and have a salty taste.
- Make a habit of peeling the outer layer of vegetables like onions and cabbages then wash with a baking soda solution. When cooking, keep the lid open. Scientists suggest that with steam toxins absorbed inside or deposited on the surface of vegetables move upwards.
- For fruits whose outer layer you do not intend to consume, make sure you wash them before peeling to avoid bringing toxins from the outer surface to the inside part of the fruit when cutting.
- Soak fruits in a mixture of water and vinegar for a period of 30-60 minutes then rinse with cold water. This will help in reducing toxins to a larger extent and keep the fruits fresh for a longer duration.
- You may not always have the luxury of soaking your fruits. In situations where you do not have time to soak and rinse your fruits simply spraying will help you. Mix one tablespoon of lemon juice, two tablespoons of white vinegar, and one cup of water in a bowl. Pour it into a glass spray bottle. Remember to avoid using plastic bottles for storing the liquid. Shake it well before generously spraying on the fruits; once sprayed, rub them for 30 seconds by hand or a vegetable brush, and rinse thoroughly in cold water.
- Avoid consuming fruits that are chemically ripened. Fruits like bananas have black stalks when ripened naturally unlike having green stalks when ripened chemically.
- Avoid eating fruits and vegetables that are not in season since they are most likely to have a higher percentage of toxins and pesticides which are applied to meet the high market demand.



Reasons why your chickens are not laying eggs

My name is Patrick Lukanga from Kajiado. My chickens are not laying eggs. What could be the problem?

By Violet Agweya

Thank you for posting this question Patrick. One of the major reasons why laying chickens may start laying fewer eggs or stop laying altogether is the diet they are fed. An improved nutrition can raise the average quantity of eggs laid by 100 percent.

Chickens need energy feeds, protein, minerals and vitamins.

Energy feeds are obtained from cereal grains such as maize and its by-products (bran), sorghum, wheat and its by-products (bran), rice and its byproducts (bran, polishing), and roots and tubers such as cassava root meal, yams and sweet potatoes. A quality formulation should contain 75 percent energy feeds.

Protein sources include maggots, termite eggs, insects, worms, peas, beans, pumpkin seeds, oats and oil cakes from ground nuts, cotton seeds, palm kernels, and coconuts. Animal byproducts such as meat meal or bone meal from chicken, and synthetic amino acids are not allowed in organic farming. Protein percentage in a poultry diet need not exceed 20 percent.

Scavenging chickens obtain vitamins from green grass, vegetables, fresh cow dung and through sunlight. For confined birds, vitamins are purchased from agrovet stores or feed stockists and given in very small quantities.

Egg laying chicken require sufficient minerals for bone and eggshell formation. Essential minerals in egg laying chickens are calcium and phosphorus. To ensure adequate supply of these minerals to your egg laying chickens, provide free access to limestone and add burned eggshells in the diet.



Alternatively, farmers can make their own feeds at home using rations provided below:

Ingredient	% composition		
	Chick ration	Grower rations	Layer rations
Maize	30	25	35
Wheat	20	25	-
Wheat bran	10	15	-
Rice bran	10	10	35
Sunflower cake	10	5	-
Cotton seed cake	5	11	-
Fish meal	3	2	15
Beans	10	5	-
Limestone	0.5	0.5	2
Salt	0.5	0.5	0.5
Soya cake	-	-	10
Ground dried legume leaves	-	-	3.5
Mineral premix	1	1	1
	100		100

Note that the fish meal must be organic, without any chemical composition.

Free range chickens require enough time and space for scavenging in the surroundings daily, early in the morning and late in the afternoon when there are plenty of insects and less heat. Chicks below six weeks of age should be confined. You can make feeds for these chicks using the rations as follows:

Ingredient	Quantity
Crushed maize/sorghum or millet	1 kg tin
Wheat/sorghum or millet bran	1 kg tin
Sunflower/sesame/groundnut cake	2 match boxes
Fishmeal/salt mix	1 match boxes
Sesbania/Leucaena leaves	2 match boxes

Note that the ingredients should be dried under a shade, as sun heat can destroy vitamins, then grounded in a motor before mixing. Do not store mixed ingredients for more than three weeks to avoid contamination by mould, bacteria or rodents and to avoid losing vitamins.

For the scavenging birds, supplementary feeds should be offered in the morning and evening when the birds come back for the night. Clean fresh water should be provided throughout the day to avoid heat stress.

For improved breeds, different types of commercial diets available at local agrovets may be offered. These are divided into three distinct categories, with decreasing amount of protein as follows.

- A starter diet or (chick mash): high in protein (18 percent) from day old up to 8 weeks; Each chick will consume 2 kg during this period.
- A growers' diet/mash: lower in protein (14 percent); from 9 weeks up to 18 weeks; Each grower will consume about 8 kg during this period.
- A layer diet/mash: medium in protein (14 percent); offered to hens from 19 to 75 weeks. Allow 120 g of feed per bird per day. Hens consume about 45 kg of feed annually.

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Location	Frequency
Webuye	95.9
Garissa	88.7

Location	Frequency
Taita	107.4
Narok	102.3
Nyeri	105.7
Machakos	93.8
Makueni	
Kitui	
Meru	105.1
Marsabit	88.3

Location	Frequency
Nakuru	104.5
Gilgil	
Kisii	91.3
Kisumu	105.3
Mombasa	105.1
Kericho	90.5
Eldoret	91.1

Tuko Mbele Pamoja!

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Apart from feeding, causes of chickens' failure to lay eggs or a reduced egg production include:

Not having enough daylight: Chicken layers need plenty of natural day light for at least 14-16 hours a day. To achieve this in areas with inadequate light, one should consider fitting transparent roofing sheets or placing an artificial light in the coop. Light in laying birds stimulates increased egg production. There should be a period of at least 8 continuous hours without artificial light at night to respect the daily rest-period of the chicken

Broody hens: When a layer's hen becomes broody, she will sit on top of her eggs for 21 days until they hatch making it not to lay any egg.

Signs to look out for if your hen is broody: When a hen is broody it will sit in the nest box all day, it will stop anything from getting near her eggs and remove her breast feathers to give the eggs heat from her body and when there are new additions to the flock.

Old age: Chickens lay eggs for around 4-5 years, after which they stop laying. If your chickens have exceeded this period in egg laying, then a stop in their egg-laying is perfectly natural and expected. Chickens that lay only occasionally such as bantams and other exotic birds, (*see TOF Issue 189 Pg. 6*) might lay longer as they only squirt out an egg when they feel like it.

Illness: Another cause could be that they could have cold or be infested by parasites such as lice, mites and worms. To ensure your chicks are safe from these infestations, provide a clean and spacious environment. The house should not be wet or crowded.

Stress: Stress, like for most creatures, causes a decrease in productivity meaning there will be a decrease in egg production. Some causes of stress in chicken include the existence of predators, a high rooster to hen ratio and lack of sunshine.

All creatures need some sunshine. The sun helps the birds manufacture Vitamin E. Chicken must have an outdoor exercise area where they can sun themselves and take dust bath during the day. This helps keep down external

parasites, reduces stress and keeps the birds more resistant to diseases.

Extreme weather: When the weather is extremely hot or extremely cold, there will be a drop in egg production. The effects of extreme weather can be reduced by providing the chicken with plenty of drinking water and adequate ventilation in the coop if the weather is too hot or deep litter method/ insulating the coop, if the weather is too cold.

To insulate the chickens' house, use cartons, hay or old clothing, but ensure to leave ventilation spaces.

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