

# Housefly control in layer and breeder farms

S R Group



**Dr. S. Ravinder Reddy**  
**MVSc,PhD**  
**S R Group**

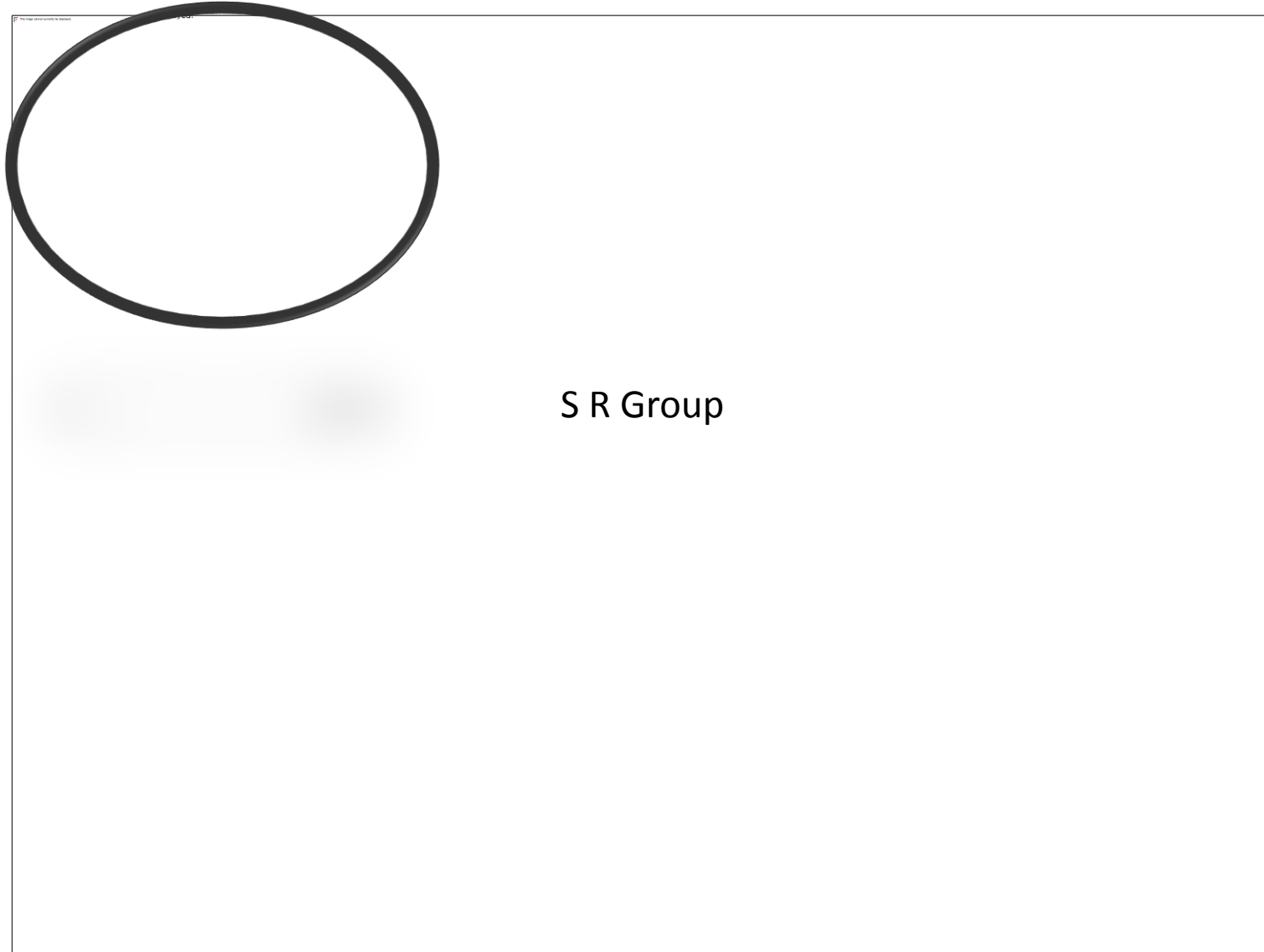
# Flies found in Poultry farms

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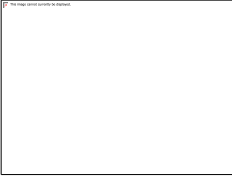
# Green bottle fly- Flesh eating

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# Housefly: *Musca domestica*



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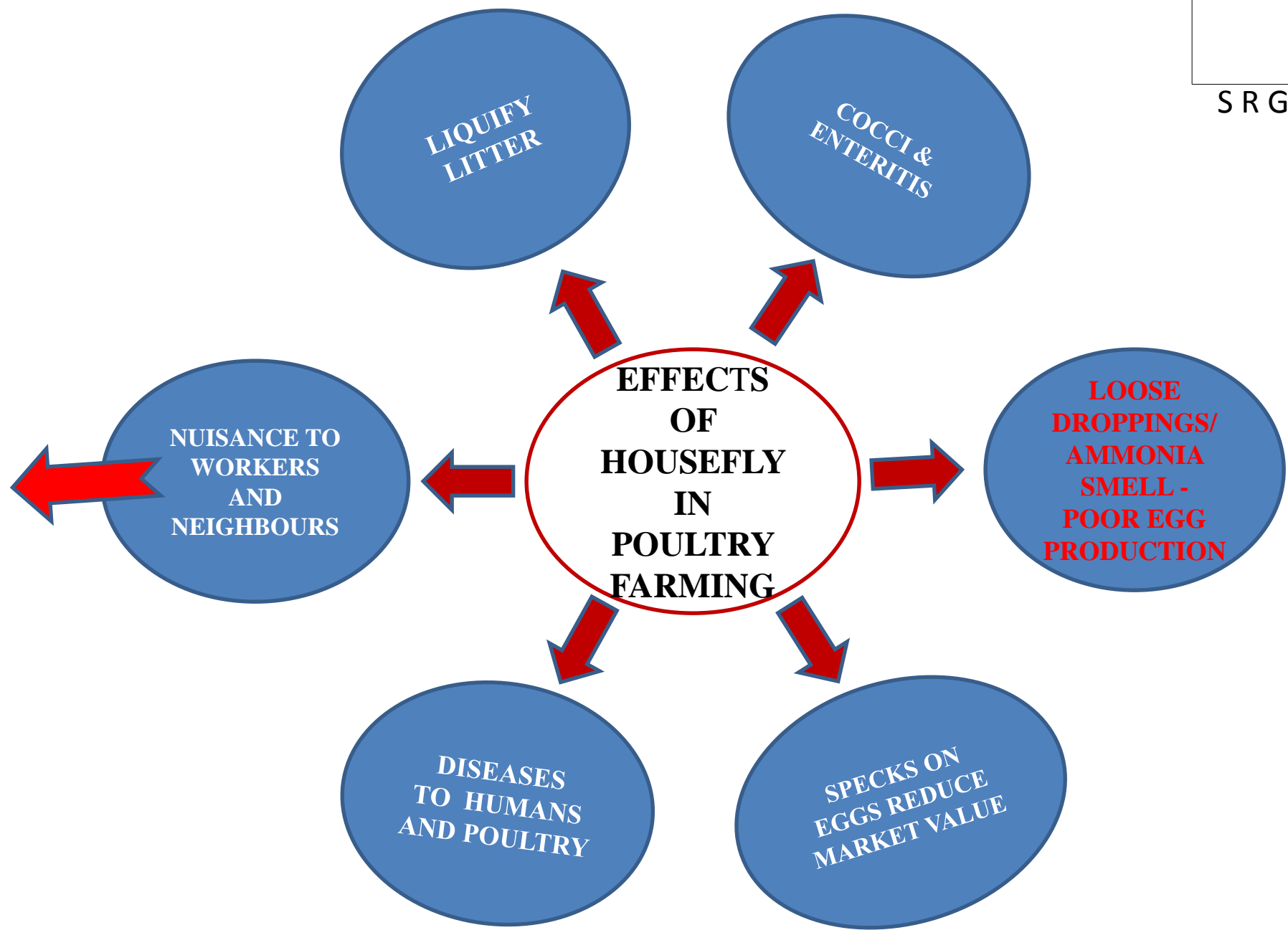
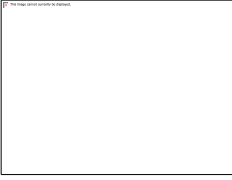
# **What should I talk about ?**

## **Technical or Practical approach**



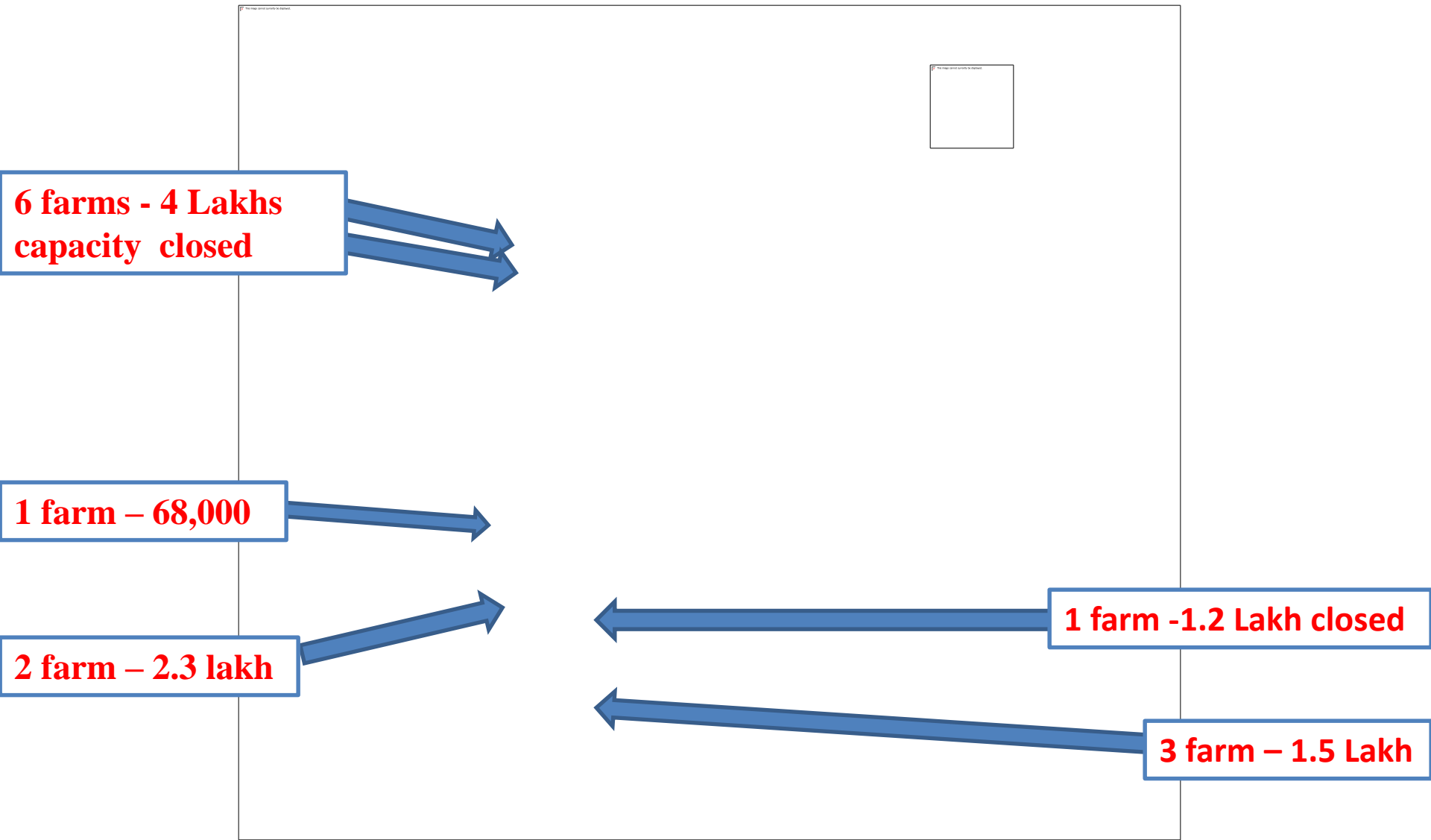
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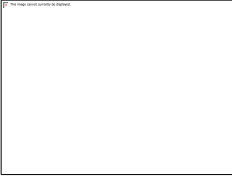
- **Technical information on different chemicals used in poultry are very well known to you. I will try to deal with the practical aspects of Fly control as I am also a victim of fly problem**
- **I am going to share my experience on the ways and means of house fly control practiced by commercial layer & breeder farms in Southern states**



# Poultry farms closed ( Approx.) in India due to fly menace

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**(LIFE EXPECTANCY 10-25 DAYS)**

**Adult Fly**

**Eggs**

**Pupa**

**Larva**

# Fly life cycle

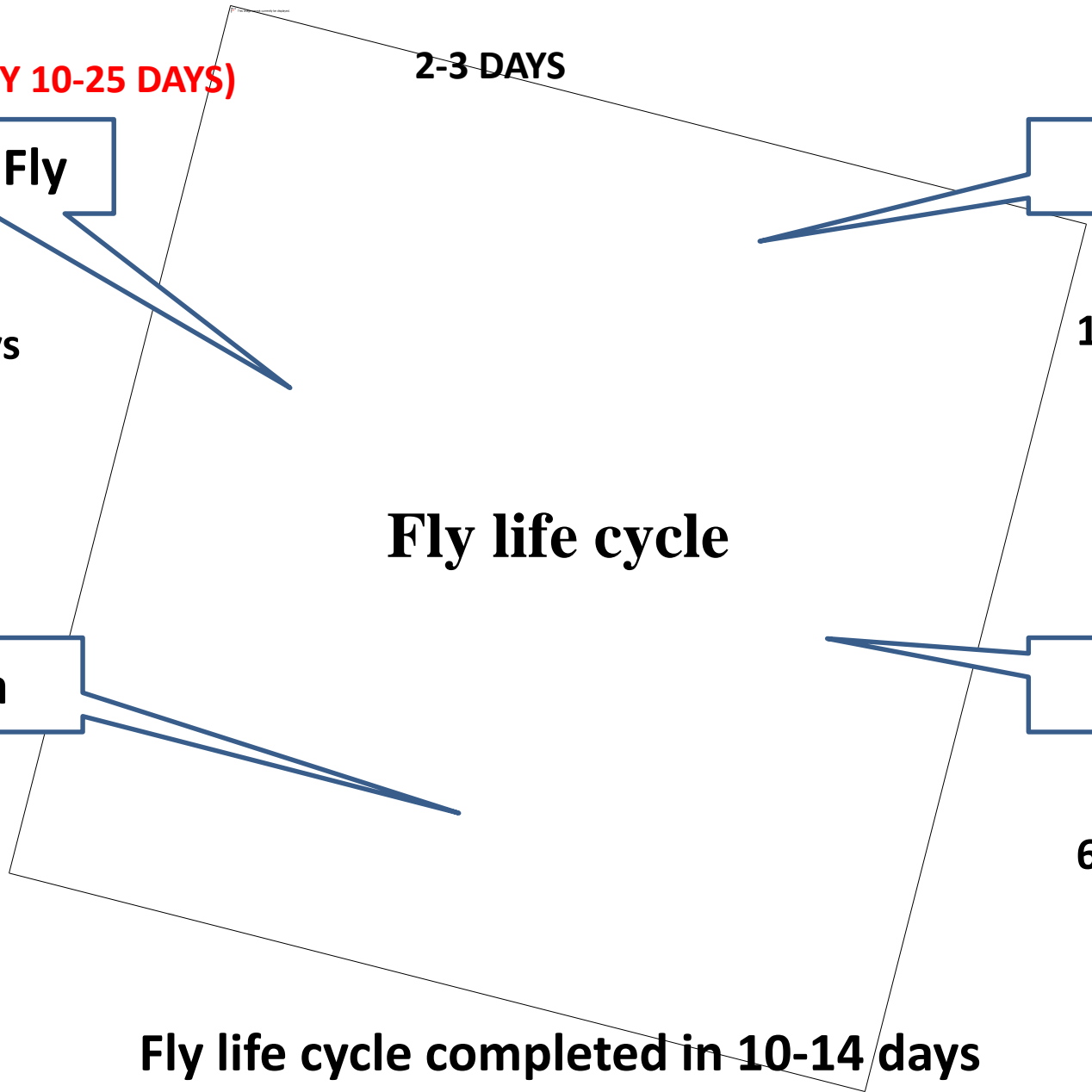
**2-3 DAYS**

**12-24 hrs**

**6 -8 days**

**3-6 days**

**Fly life cycle completed in 10-14 days**





# 30 year old layer farm in Hyderabad

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# Clean sheds –less flies

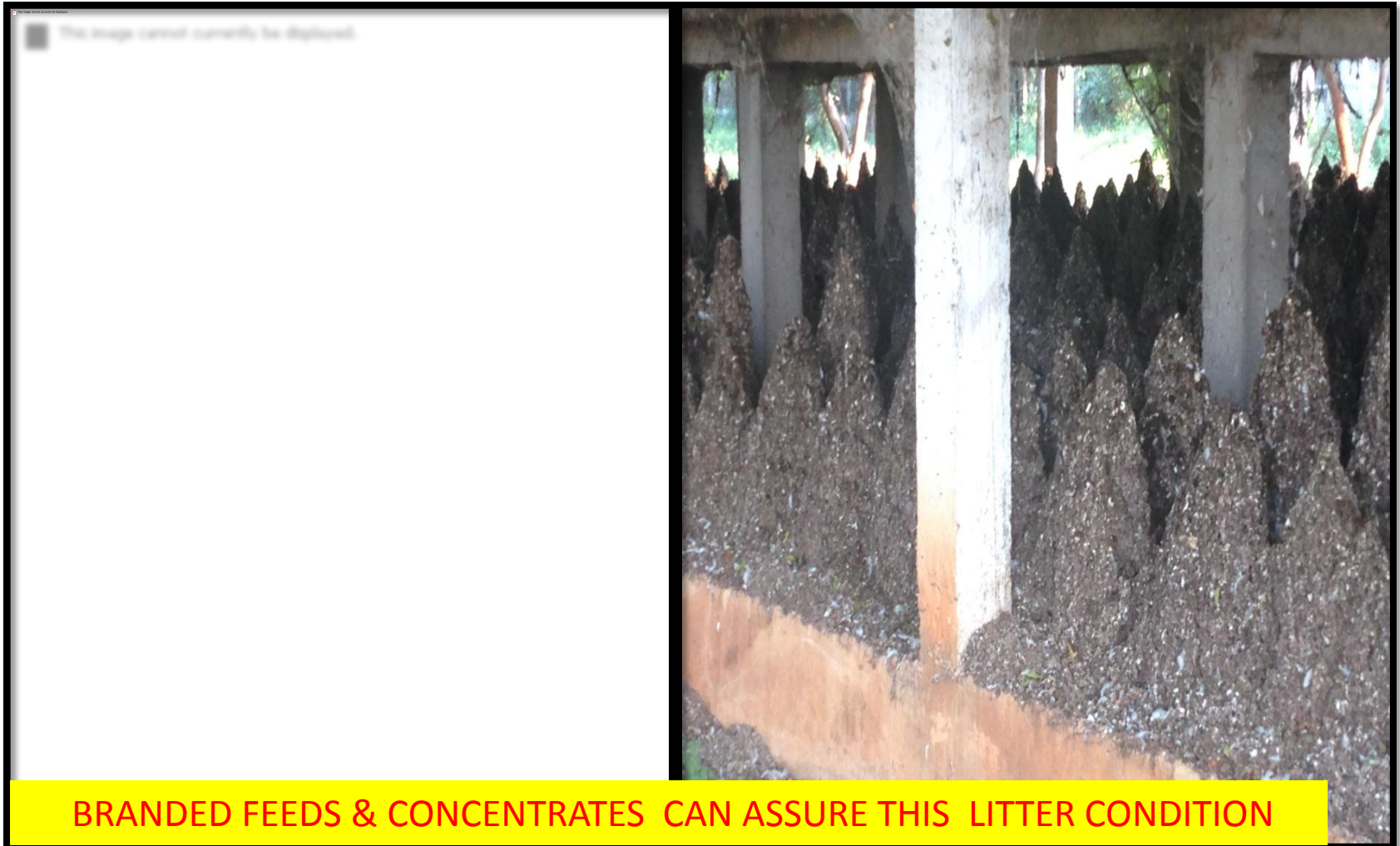
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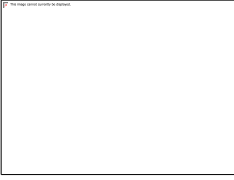


# Good litter condition in sheds- no flies

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# Gut health - dry litter



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- **Healthy flock with good gut health produces dry litter**
- **Acidifiers and coated *Sodium butyrate* are useful**
- **Gut acting antibiotics – infections**
- **Xylanase, Silicates, Bentonite – Non specific**
- **The litter moisture content should be less than 30-40 %**
- **The larvae grow in Poultry litter with moisture content above 40%**

# Poor litter quality with broken eggs

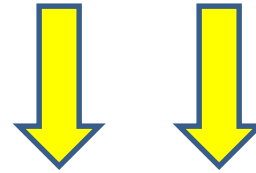
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# Wet patches close to water tanks

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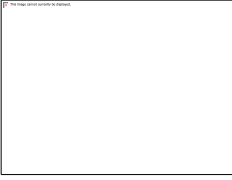
INSIDE WATER TANKS SHOULD HAVE OVERFLOW PIPES

# Moisture content of litter

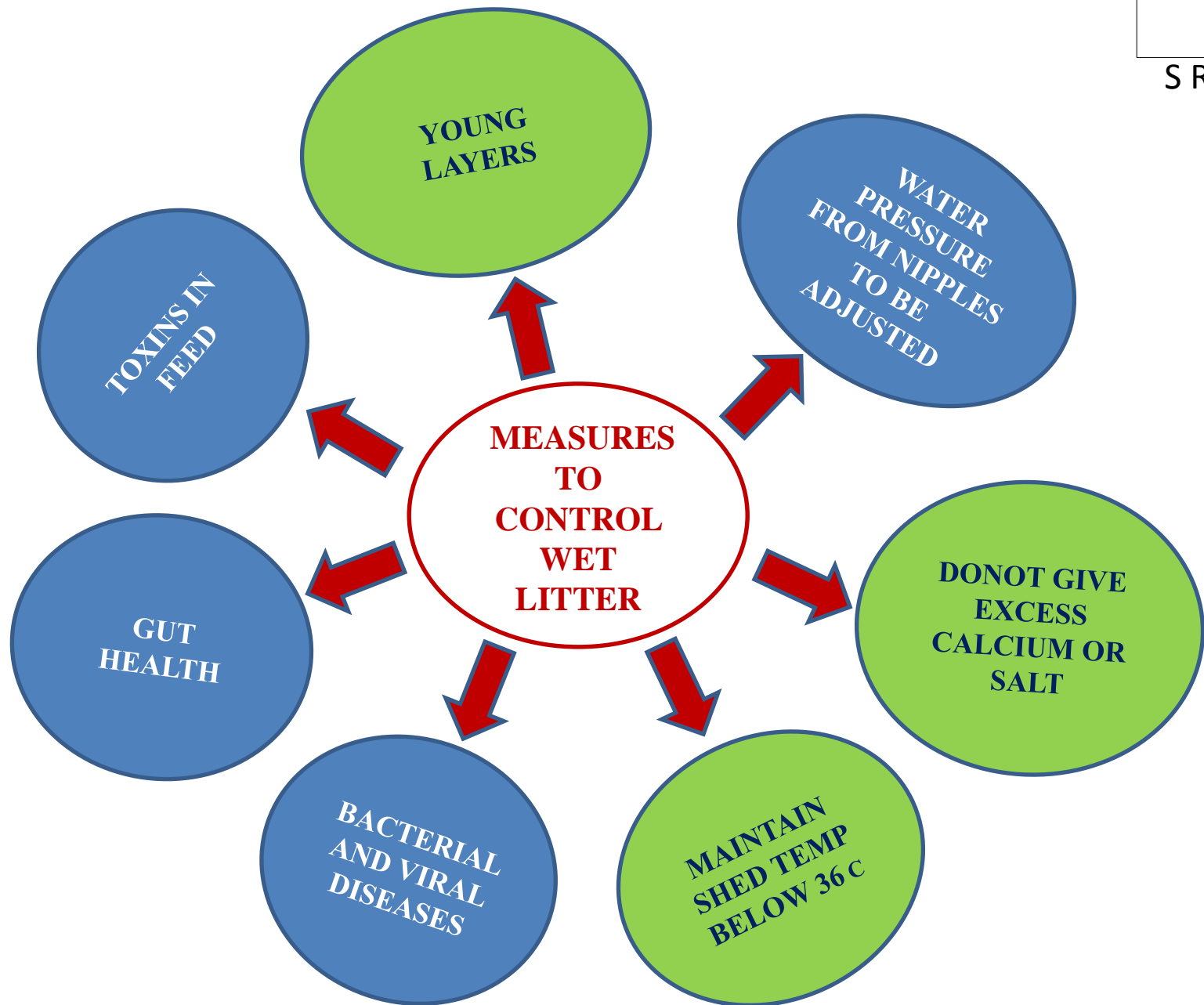
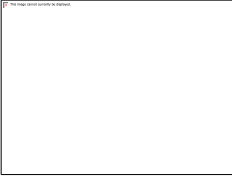
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S.NO.	AGE OF THE FLOCK	MOISTURE (March 14)	MOISTURE (Oct 14)
1	GROWER	63.4	69.2
2	GROWER	30.2	76.0 84.6
3	LAYER	52.2 58.8	74.7 79.0
4	LAYER	66.07 68.8	78.0
5	LAYER	59.3 58.7	76.9
AVERAGE		57.2	76.9

Samples collected from R R Foods and Feeds, Hyderabad







# Correcting loose droppings in layer farm

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SNO	FEED TYPE	CALCIUM %	SALT %
1	CHICK FEED	1.3 ( 0.9 )	0.40
2	GROWER FEED	1.5 ( 0.9)	0.50
3	PRE LAY FEED	3.0 ( 2.2)	0.45
4	LAYER FEED - I	5.1 (4.0)	0.58 (0.40)
5	LAYER FEED - II	5.2 (4.2)	0.60(0.40)

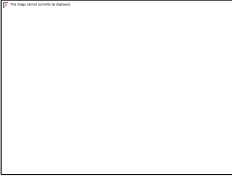
Optimum levels are in Brackets

# **Global scenario in fly control**



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- **EC sheds with daily litter removal**
- **Distance between farms is more and farms are away from residential areas**
- **Litter burnt to ash and used in home gardens**
- **Fly traps, baits**
- **Composting in Asian countries**
- **Bio-gas**



# Global trends:

## Insecticide-treated targets for fly control / interception



- Visually attractive targets have been tested for their ability to intercept and kill dispersing flies
- The most attractive configuration consists of adjoining bands of alsynite **fiberglass and blue fabric with peak reflectance at 460 nm**

**We also started Applying insecticides to blue curtain pieces to attract flies**

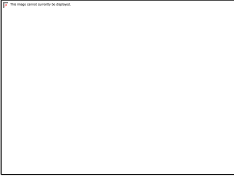
# **Current practices in fly control in India**



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- **Lime stone powder is used to reduce the litter moisture and chemicals are used to kill larva and adult flies**
- **Only 50-70% larva and fly population can be controlled by these methods and present group of chemicals are not going to work in future.**

# Larvicidal products



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- **Chemical, herbal and bacterial culture**
- **Cyromazine is a powerful larvicide**
- **Imidacloprid**
- **Diflubenzuron**



Herbal preparation spread on litter

# Di flubenzuron spray to kill Larvae in litter



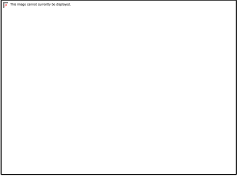
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Resistance to chemicals is emerging phenomena

# **Disadvantages of using chemicals**



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- **Resistance to insecticides**
- **Poisoning in humans : people may lose consciousness and may die due to strong chemicals like Dichlorvos 76 % sprayed in the sheds.**
- **Production drops in birds due to chemical spraying on feeders.**



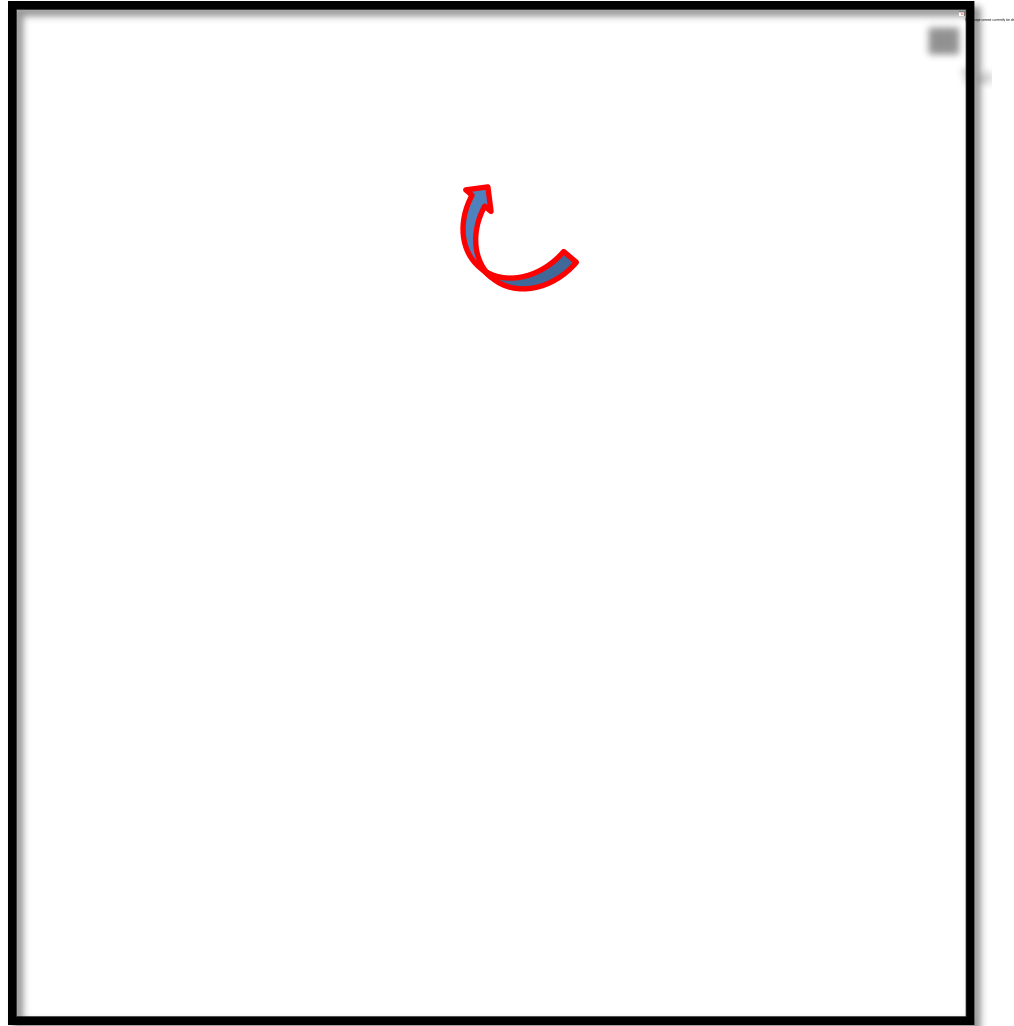
# Rotavator for clean surroundings

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- **Remove bushes and vegetation around the poultry shed by use of tractors with rotavator**
- **Government is subsidizing the rotavator price ( Rs.60,000/ )**

# Manual removal of litter

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# **Tractor Loader for Litter removal useful for commercial layers**

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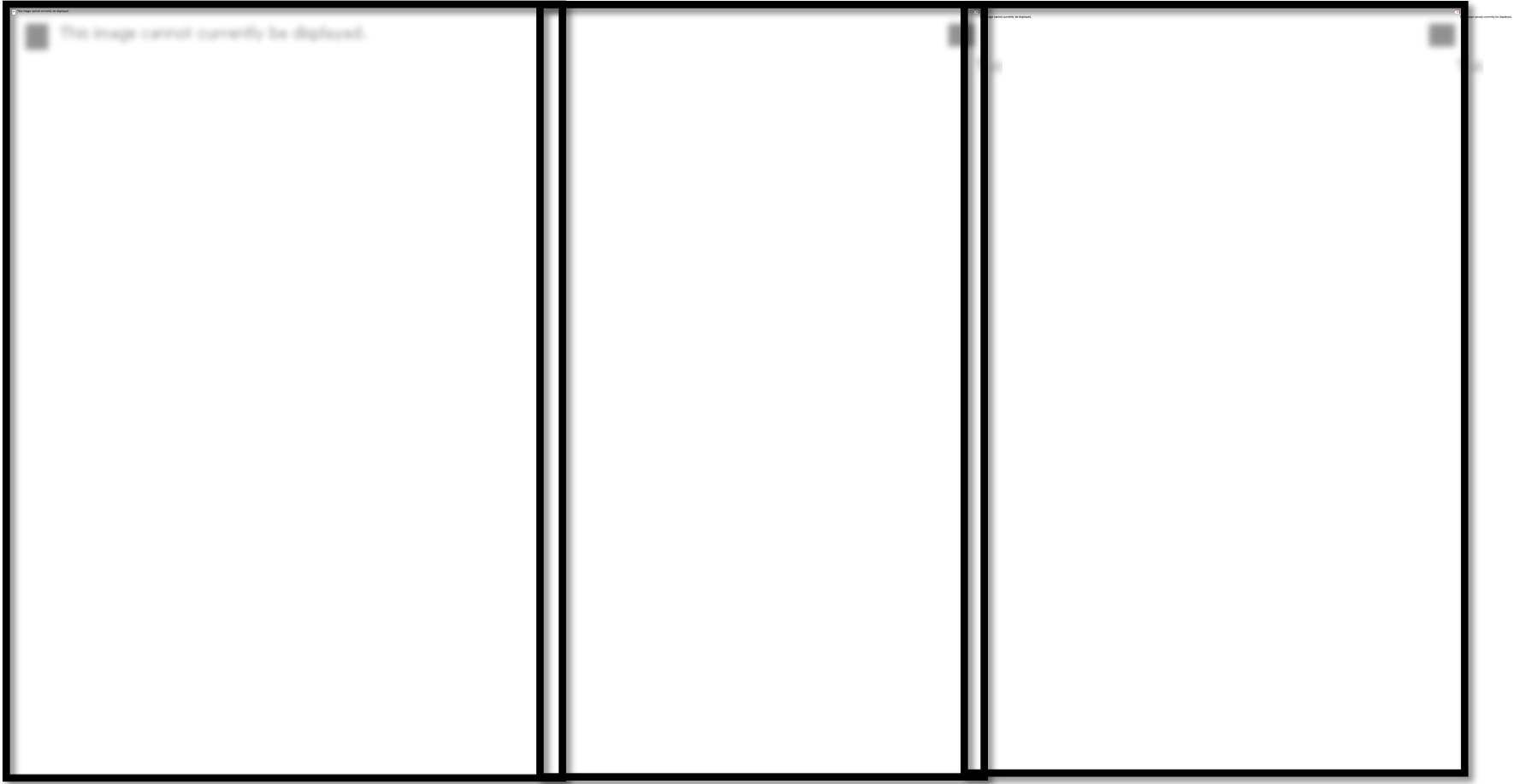
**The cost of this Manure  
Loader is Rs 4-5Lakh**

**Mr. M.Srikanth Reddy,  
Kandukur, Telangana**

# Eggs in clusters

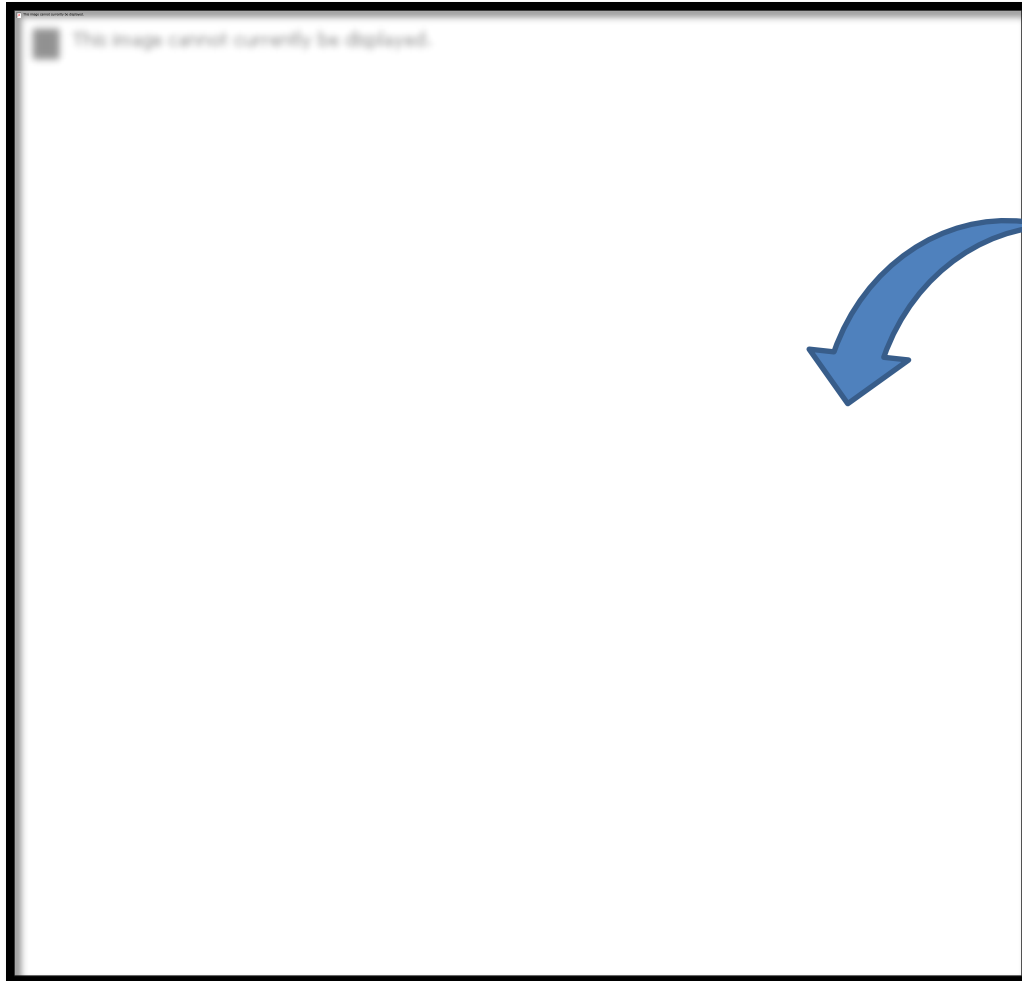


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# Egg collection

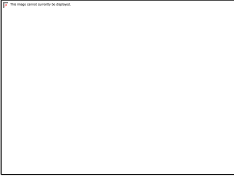
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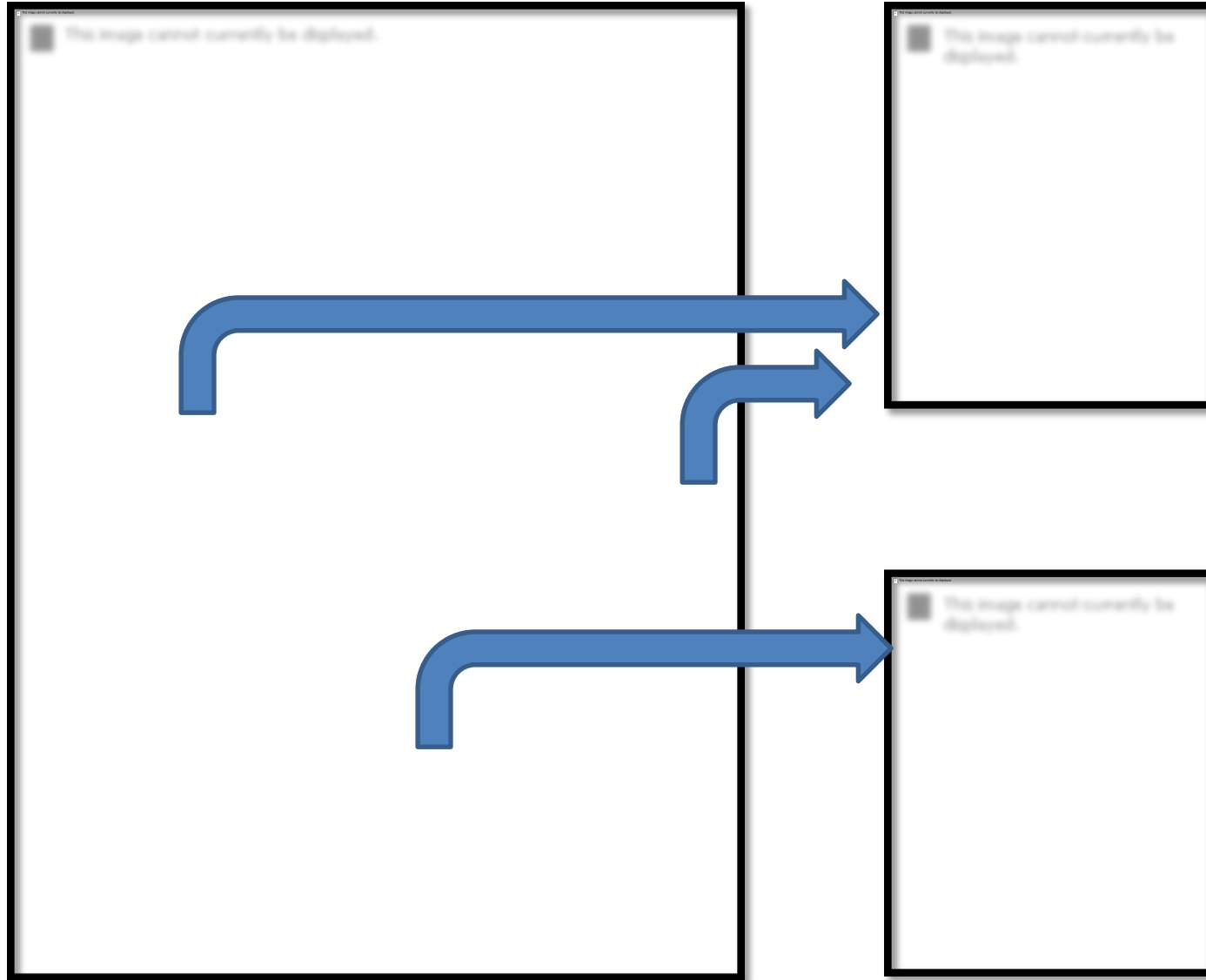
➤ Eggs collected at 10 am and 4 pm by small iron or asbestos sheet

**MR. SATYANARAYANA REDDY,  
EAST GODAVARI**

# Collect larvae and pupae from litter



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# Fly control cost for 1 lakh birds per month

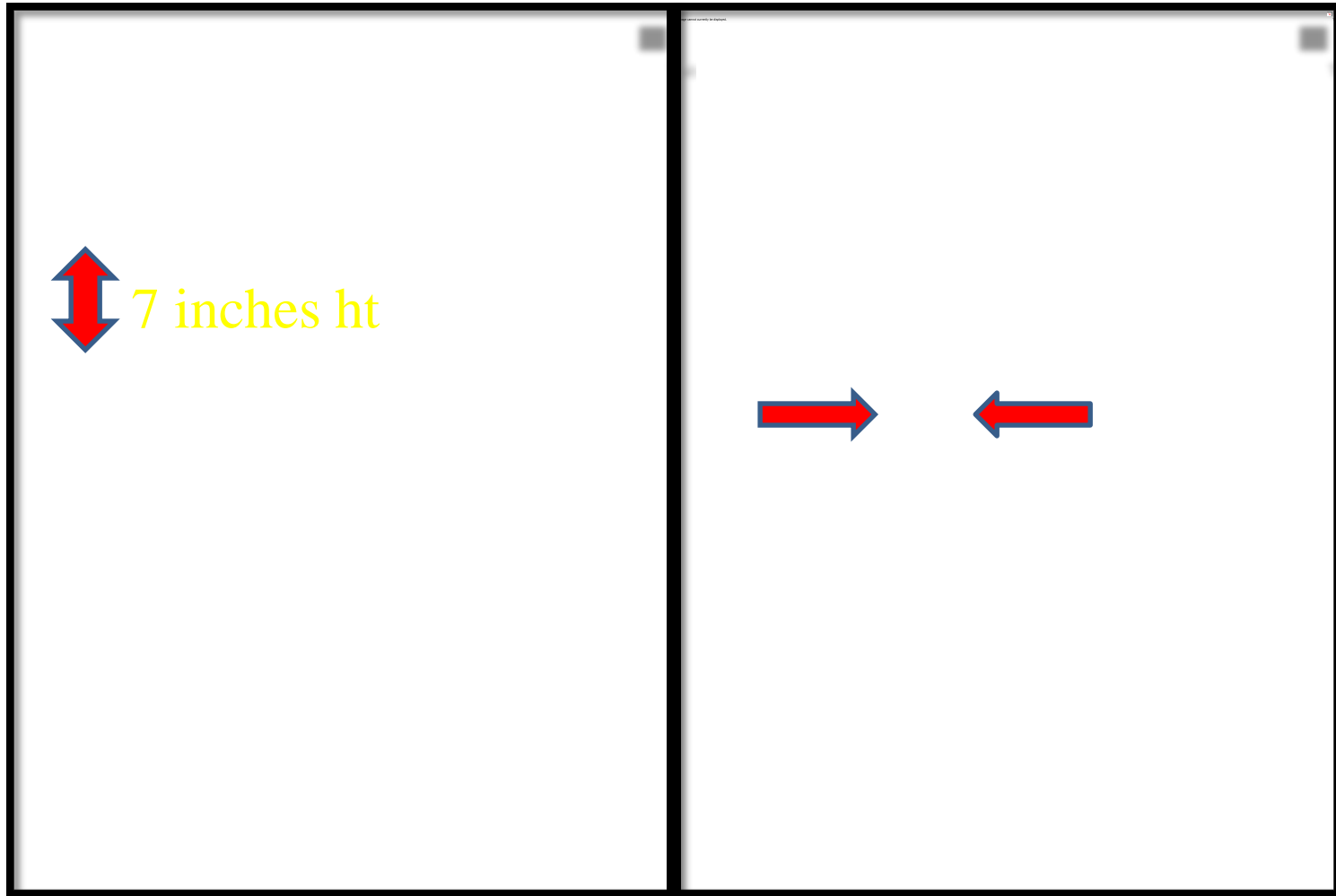
Cost of litter removal (twice a week)		
	Commercial layer	Broiler breeder
No. of laborers*	10	20
Cost in Rs/bird	0.55	1.57

Cost of removing eggs, larvae & Pupae		
No. of laborers	3	8
Cost in Rs/bird	0.16	0.44

\*Labor salary/month is Rs. 5500 .  
One labor can remove litter of 3000 layers

# Flooring of the sheds

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# Shed Flooring Expenditure

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	Concrete Flooring	Tandur / Cuddapah flooring
<b>Cost in Rs/sq ft</b>	<b>26-29</b>	<b>20-23</b>
<b>Durability (years)</b>	<b>8-10</b>	<b>5-6</b>
<b>Cost in Rs/layer</b>	<b>19.2</b>	<b>15.0</b>
<b>Cost in Rs/ female breeder</b>	<b>55</b>	<b>43.0</b>
<b>Rat control</b>	<b>90%</b>	<b>80%</b>

# Fly control cost (Rs.) for 1 lakh birds /Month

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## MANUAL REMOVAL OF LITTER AND FLOORING

	Commercial layer	Broiler breeder
<b>FLOORING COST</b>	<b>15-19</b>	<b>43-55</b>
<b>LITTER REMOVAL COST</b>	<b>0.55</b>	<b>1.57</b>
<b>TOTAL COST</b>	<b>0.83</b>	<b>2.38</b>

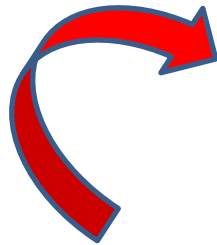
## COST OF FLY CONTROL- CURRENT METHODS

<b>LARVICIDE &amp; LIME COST</b>	<b>1-2</b>	<b>2.0-2.5</b>
<b>ADULTICIDE COST</b>	<b>1-1.5</b>	<b>3.0-3.6</b>
<b>TOTAL COST</b>	<b>2-3</b>	<b>5-6</b>

Flooring cost ( of two methods ) divided by 60 months

# Putting water into manure pit

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Water added to the manure pit in Hyderabad area  
Contamination to poultry and environment

# **Cost of adding water into manure pits (4-6 inches deep) for 1 lakh birds**

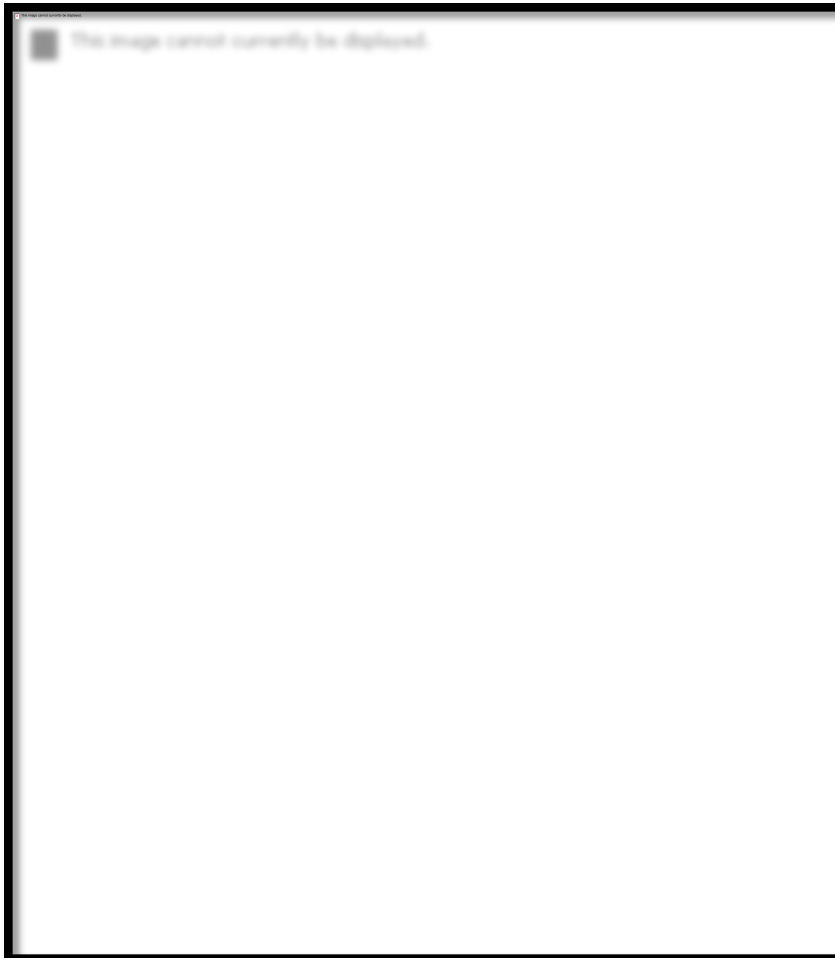
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	<b>Commercial layer</b>	<b>Broiler breeder</b>
<b>No. of labors</b>	<b>1</b>	<b>2</b>
<b>Cost in Rs./bird *</b>	<b>0.66</b>	<b>1.88</b>

we have to purchase water for 3-4 months/year  
Flooring of manure pit reduces water cost 2 times

# LITTER REMOVAL-SCRAPERS

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- **Capital Cost is Rs 50-60 per bird depending on shed length**
- **Good for farms > 50,000 birds**
- **Zero labor required**

**Mr. G. Sheker Reddy, Hyderabad**

# Fly control cost for 1 lakh birds/Month

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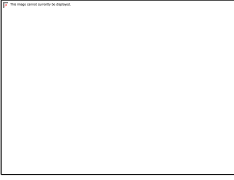
MECHANICAL REMOVAL OF LITTER		
	Commercial layer	Broiler breeder
FLOORING COST, RS / BIRD	15-19	43-55
SCRAPER COST RS / BIRD	13-15	50-60
TOTAL COST Rs/bird	28-34 ( 0.52)	93-115 (1.73)

FLOORING & WATER COST (Rs.)		
FLOORING COST	15-19	43-55
PUTTING WATER INTO MANURE PIT	0.66	1.88
TOTAL COST/BIRD	0.94	2.70

# Fly tapes

- **Natural glue based ½ inch width tapes with nectar**  
**It can kill 80 adult flies per feet length**
- **Plastic fly tape has to be tied underneath the shed**  
**for raised platform sheds (10 feet apart) and above**  
**the cages for cages fixed on the floor**
- **It is effective for 8-14 days**

# FLY TRAP-DEVELOPED AND PATENTED BY TNAU, CHENNAI



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# Small percentage has big hidden benefits

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Dr. Vijay Anand, USSEC

# Dead bird disposal is mandatory for fly control

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**UNSCIENTIFIC  
METHODS**

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**FARM  
SANITATION**

**DRY  
LITTER**

**LITTER  
REMOVAL**

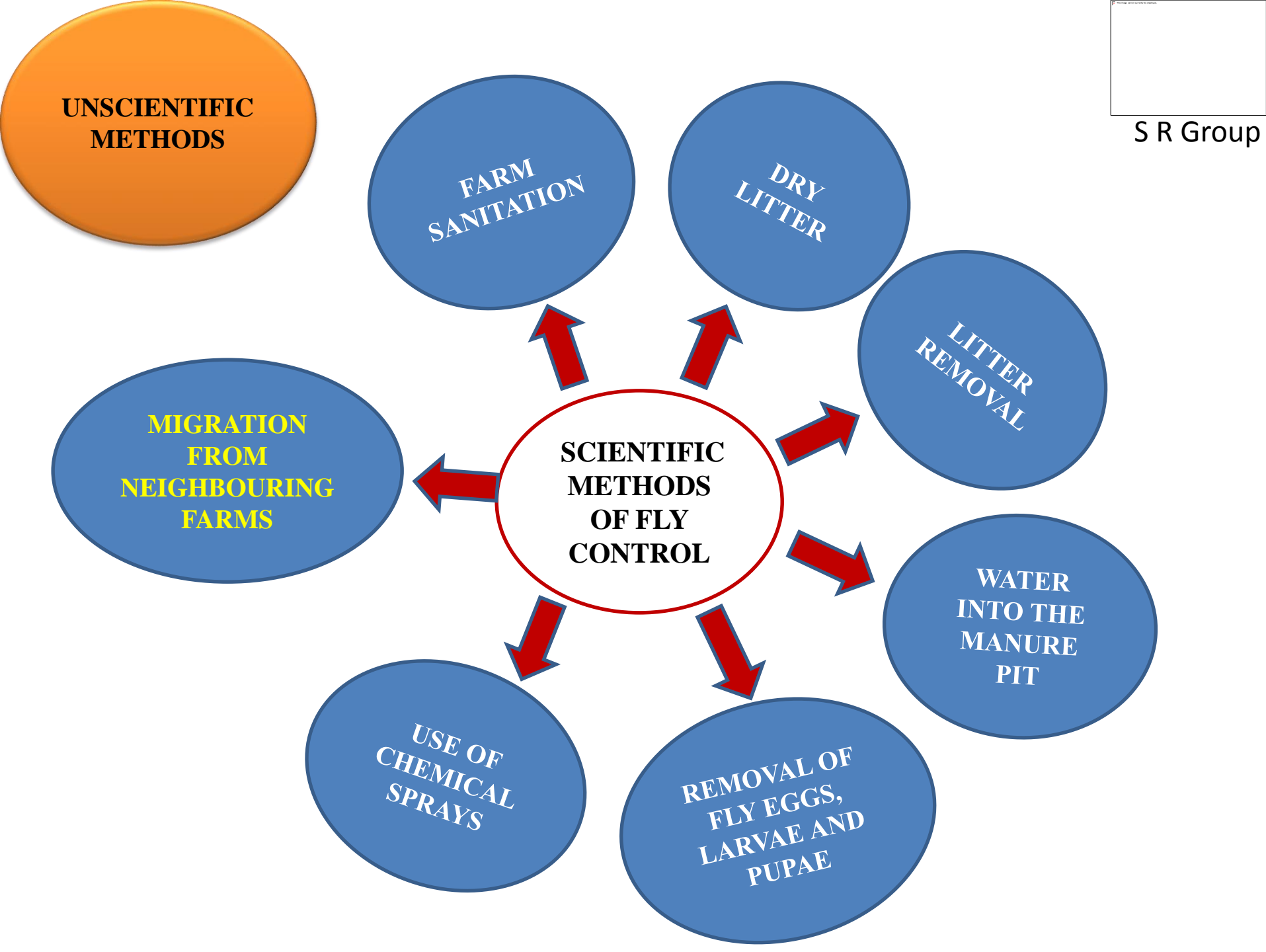
**WATER  
INTO THE  
MANURE  
PIT**

**REMOVAL OF  
FLY EGGS,  
LARVAE AND  
PUPAE**

**USE OF  
CHEMICAL  
SPRAYS**

**MIGRATION  
FROM  
NEIGHBOURING  
FARMS**

**SCIENTIFIC  
METHODS  
OF FLY  
CONTROL**



# Why I feel my recommendations are practical - - - -

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- Fly Eggs are removed by AP and Telangana farmers
- Larvae removed by Tamilnadu farmers
- Flooring done by 50 % of Breeders in Karnataka
- Water put into manure pit by most of the breeders in Telangana.
- Scrapers used by few breeders in Telangana
- Chemicals used by most of the poultries

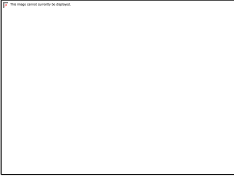
# Conclusions



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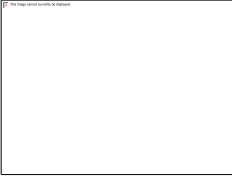
- **Combination of Physical, Chemical and Biological methods are required to control housefly menace in tropical climates**
- **Our Country has the highly vigilant media and increased awareness of public might result in enforcement authorities swinging into action with PCB and Animal Welfare Act provisions**

# **Future direction**



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- **Cost effective mechanical litter removal and easy drying techniques-solar dryers**
- **Larva meal as a source of animal protein to livestock**
- **Long lasting insecticidal nets used elsewhere are effective for more than 3 years-why not we try them in India ?**
- **Bio gas production – Namakkal , Raipur**



**Thank you for your patience**