

(vi) Egg to Feed Price Ratio:

He ratio hi FCR (egg mass nen a inang a ni); a rih zawng aiah, a pawisa zatin a hlutna dah a ni i.e. artui thar chhuah hlut zawng leh chumi atana chaw ei ral hlut zawngte inlaichinna.

(vii) Cracked Egg %

Hei hi artui kehzat (abikin CLH-ah artui cage chhuata a lirr vanga lo awm), artui thar chhuah zata sema, 100 a puntir leh a ni.

(viii) Stage break even point (BEP)

Hei hi artui thar chhuah a tanga lakluh chu a chawman senral zata sem a, 1.175 a puntir leh ani. Artui a tanga lakluh chu artui thar chhuah leh artui man puntir a ni.

Note:

- He number 1.175 lo chhuah dan chu, layer te hian antui tan hma (awplum chhung leh thanlen chhungin) archaw kg 7 eiral tura ngaih an ni a, an tui chhung zawng hian chaw kg 40 an eiral bawk a. Tichuan, a chawman punna chu $(7 \div 40) = 0.175$, BEP diktak hmutur chuan alo nita a ni. Mahse, hetah hian chick starter, grower leh layer ration te chu a man inang vek tura ngaih a ni.
- Chiangta chu, ar vulhtu chuan BEP chu >1 anih chhung chuan ar chu ala kawl thei ang a, dahna tur inah buaina a awmlon chuan.
- A tlangpuiin, damdawi, vaccine, mortality leh administration te chu an tharchhuah senso ah inrawlhna an nei ve tho a, chuvangin, BEP chu 1.30 nise tih hi duh dan tlanglawn a ni a, farm duhthusamah chuan BEP >1.40 a ni.
- BEP <1 anih tawh chuan chung arte chu kawl reng an hlawk tawh lo a ni.

(ix) Weekly egg production and livability standards

Upat dan angin 21st week atanga 80th week a upa an nih thlengin standard HDEP values an awm a ni (Table 3.9). Hei hi artui thar chhuah hen-house basis-a chhut chhuah nan a tangkai hle a ni.

Table 3.9: Weekly HDEP Standards (Age in weeks, HDEP in %)

Age	HDEP	Age	HDEP	Age	HDEP	Age	HDEP	Age	HDEP
21	25	33	94	45	91	57	87	69	82
22	57	34	94	46	91	58	87	70	82
23	80	35	94	47	90	59	87	71	81
24	90	36	94	48	90	60	86	72	81
25	94	37	93	49	90	61	86	73	78
26	95	38	93	50	90	62	86	74	77
27	95	39	93	51	89	63	86	75	76
28	95	40	93	52	89	64	85	76	75
29	95	41	92	53	89	65	85	77	75
30	95	42	92	54	89	66	84	78	75
31	95	43	92	55	88	67	84	79	74
32	94	44	91	56	88	68	83	80	74

Note:

1. Number of birds at the completion of 20 weeks is taken as 100%
2. From 21st week of age onwards, a mortality of 0.1% per week is allowed. That means, by 30th, 40th, 50th, 60th, 70th and 80th week, number of layers surviving (livability) will be 99, 98, 97, 96, 95 and 94%, respectively.
3. In simple terms, livability % = $100 - 0.01 \times (\text{Age in weeks} - 20)$
4. HHEP = $(\text{HDEP} \times \text{Livability}) \div 100$
5. Weekly egg production per hen = $(\% \text{HHEP} \times 7) \div 100$
6. Generally, birds are kept till 72 weeks of age

Example

Arpui 500 tan artui kar 40th na a an thar chhuah zat chhut dawn ila:

HDEP (a chung chart atangin) = 93%, livability = 100 – 0.01 x (40-20) = 98 %.
 Chuvangin, HHEP = (93 x 98) ÷ 100 = 91.14 %. Tichuan, arpui pakhat thar chhuah
 chu (91.14 x 7) ÷ 100 = 6.38 eggs, 40th week ah leh arpui 500 ten an thar chhuch
 zat chu (500 x 6.38) = 3,190 eggs.

Hetiang hian kartina artui thar chhuah zat tling khawm (cumulative) te chhut chhuah
 theih a ni.

I hmasawna enfiah rawh 3

Note: a) Ichhanna te ziah nan a hnuai hmunawl hi hmang rawh.

b) Ichhanna chu zirlai tawp lam atang khan endik ang che.

1) Judging of layers sawifiah rawh.

.....

2) Engvangin nge fluorescent bulbs aiin incandescent bulbs a that zawk?

.....

3) Engvangin nge bulbs te chu nghet tak leh reflector neia vuah an nih?

.....

4) Layers performance tehkhawng atana hman hming 3 ziak rawh.

.....

Tihtur 3

Layer house hnaivai a mi tlawh la. Layer enkawl na a an tihdan zawt la, chhuat,
 chaw pekna leh tui pekna a tana hmun duh zat, deworming leh vaccination
 schedule, eng pek rei zawng, artui khawn khawm leh dahthat dante an tih dan
 ziak rawh.

.....

3.5 ZIRLAI ENLETNA

Layer te hi kar 18-20 a upa annih thleng chu BGH-ah vulh anni a. An tui tan veleh
 CLH ah dahsawn an ni thin. Layer note te hi awplum annih chhunga (kar 8 a upa an
 nih thleng) enkawldan chu broiler te nen a inang a, amaherawhchu, an tet zawk
 avangin an chhuat mamawh zau zawng, tui leh chaw pekna atana hmun mamawh

zauh zawng te chu a tlem zawk a ni. Thanglai annih lai (9-18 or 20 weeks) hian an thau lutuk loh nan leh ar chaw a senso tihhniam nan an chaw ei zat bituk sak an ni. Hei hian ar chak lo a hriat hran tir a, a tha chauh CLH-ah dahsawn annih phah a, chu chuan ar tuilai te performance a lan thattir a ni. Ar thanglai annih lai a electrical trimmer hmanga an hmui tansak hi tihdan phung ve reng a ni. An ke tin a sei lutuk chuan an tansak nghal thin bawk. CLH a dah arpui te chu eng 15 ½ -16 hours chhung pek anni thin (photoperiod). Ar ten tui leh chaw an eilai a, engtha takin artui insiam a puith theih nan bulb te chu ar in chhung kalna chungah nghet taka vuah an ni. Layer te chu an tui that leh thatloh kar 26-28 a upa an nihin endik an ni. A tha lo leh tui thei tawhlo te chu lak hrana hralh zel an ni thin. Artui te chu darkar tin lakkhawm an ni a, fumigated hnuah dahthat an ni thin, a theih chuan cold storage-ah, a nih loh pawh in a rang thei ang bera hralh chhuah nghal tur a ni. Nipui khaw lum leh humidity sanlai chuan a bik takin artui vawnthat a pawimawh hle. Layer thatdan hriatnan tehfung tamtak a awm a. Mahse, hen-housed eggs production (HHEP), hen-day egg production (HDEP), feed per dozen eggs leh livability te chu pawimawh zualte chu an ni.

3.6 THUMAL HMAN LEH A HRILFIAHNA

<i>Ad libitum</i>	: Duh ang or mamawh ang or khuahkhirhna awmlo.
Bullying	: Midang chapo khum, midang hnuai chhiah.
Cannibalism	: mahni anpui saei chinna.
Cauterization	: Thilsa hmanga thisenzam chat tihphuina.
Clutch	: Chawllo a artui tharchhuah zat.
Culling	: Ar thar chhuah nei lo dah bona.
Oblong	: A tira killi nei emaw bial nihna atanga kawh lam neia pian tisei.
Photoperiod	: Nitin a êng pek reizawng.
Prolapse	: Mawngkua a tanga ril emaw chhul emaw a pahnih emaw a lo tawlh chhuak.
Pubic bone	: Kumkuruh.
Pullet	: Ar nu tui thei tep tawh.
Scoop	: Chaw ang chi lakhawm/suak.
Spent-hens	: Layer tui rem tawh.
Subcutaneous	: Vun hnuai ah.
Vent	: Ar tan chuan mawngkua.
Vice	: Nungchang thalo.

3.7 LEHKHABU CHHIARBELH ATANA RAWNTE

Ensminger, M.B. 1993. *Poultry Science*, 3rd Edition. International Book Distributing Company, Lucknow, India.

North, M.O. and Bell, D.D. 1990. *Commercial Chicken Production Manual*. AVI Publication, Van Nostrand Reinhold, New York, USA.

Sreenivasaiah, P.V. 2006. *Scientific Poultry Production*, 3rd Edition. International Book Distributing Company, Lucknow, India.

3.8 LEHKHABU RAWNTE

Sreenivasaiah, P.V. and Venugopal, S. 2008. *Small-Scale Broiler Production*. International Book Distributing Company, Lucknow, India.

Sreenivasaiah, P.V. and Venugopal, S. 2008. *Small-Scale Layer Production*. International Book Distributing Company, Lucknow, India.

3.9 IHMASAWNNA ENFIAH NANA CHHANNA TE

I hmasawwna enfiah rawh 1

- 1) Layer note te hian kar 8 a upa an nihin henghi an mamawh; floor space – 700 cm², feeder space – 5cm, drinker space – 1.5 cm. Henghi an thanlen dan angzelin tihpun an ni. Heng mamawhte hi khawlum dan 21.1°C a nihlai a chhut an ni, khawlum a san ang zelin tihpun danah chuan thutlukna siam tur a ni.
- 2) Awplum chhung kar 0 atanga kar 8 a upa an nihlai hian 21.1°C a lumah tui 9 litres an mamawh.
- 3) Livability chu ar grower house a sawnluh zat, a tira neihzat a sem chu 100 a puntir leh a ni. Hei hi mortality (thizat letling chiah a ni a; chuvangin a tam poh leh a tha zawk a ni mai. A talngpuiin livability chue 98 % (or d 2% mortality) tura beisei a ni. Hatchery te hian arnote 5% man neilovin an pe chuang thin. Tha taka enkawl na hnuaiah chuan ar vulhtu chuan arte 500 (+ 25 extra) atangin 500 tal CLH a sawn tur a nei thei tura beisei a ni.

I hmasawwna enfiah rawh 2

- 1) Chhuat, chaw pekna leh tui pekna atana layer ten thanglai an nih laia hmun an mamawh zau zawng chu a hnuaiah hian tarlan a ni.

Per bird	9 to 20 weeks
Floor space, cm ²	900
Feeder space, cm	6.50
Drinker space, cm	2.50

- 2) Ar thanglai te chu an chaw ei bituksak annih chhan chu:
 - An chaw mamawh tura chhutsa atangin 90-92% chauh pek annih avangin an chaw atana senso nasa takin a tihhniam phah a ni.
 - An tui hunah pawh chaw *ad libitum* a pek pawhin artui thar chhuah atanga chhutin chaw an ei tlem phah hle a ni.
 - Pullets (ar lâ, an tui tan hma) ten thau an khawl tlem phah a, chuvangin, ar an tui tam phah a ni.
 - Hetih hunlai hian ar chak lo zualho te chu thliar hran an awlsam bik a ni. Ar chak lo ho lak bo an nih chuan ar chaw a senso a titem a, layer house-ah ar hrisel tha chauh sawn luh an nih avangin layer house-ah an dam that phah a ni.
 - Layers te thanglai an nih laia chaw ei zat bituksak te chuan *ad libitum* a pek te ai chuan artui rit tha zawk an tui chhuak rei thei zawk a ni (artui chawl lova an tui theih zat “clutch” ti a hriat).

3) A hnuai a tarlan te avang hian ar hmui tan hi a tul a ni:

- Heng nungchang tha lo; inchuk, thiante saei, midang chapo khum, hmui leh mawng inchuksak avanga inhliam a awmlohna turin an naupan deuh laiin ar hi an hmui tan sak thin an ni.
- Chaw riral tur ven nan:
- Quantitative: A bik takin chaw dip pek phei chuan ar hi chaw zawn paha ke thai ching an ni a, hetia an tih hian chawpekna atanga chaw tih buak a tam thin a ni.
- Qualitative: Grower ration chu a dip ani thin. Ar chak zawk te chuan chaw an chuk hmasa thin a, an hmui tan anih loh chuan a hraw hraw an ei hmasa thin. A hraw ho chu energy tamna, chawtha pai tlem si an ni a, chuvangin, a chakho chu chak lo zawk an lo ni ve thung thin. A chak lo ho in chaw an ei ve meuh chuan a dip chauh a lo bang tawh thin a, an hmui a zum avangin an chuk theilo thung thin. Tichuan tlakchham an lo nei a, an chak loh belh ta thin a ni. Chutiang avang chuan ar rual pumpui chu an feed conversion ratio alo tlahniam thin a ni. An hmui tan a lo nih chuan a hraw chauh chuk lovin, a chaw zawng zawng chu an hmui a suakin, chawtha chu an eikim thei ta thin a, chu chuan than tha leh inthlah chhawn thatna a thlen ta thin a ni.
- Artui ei chinna a pumpelh tir.

I hmasawanna enfiah rawh 3

1) Layer te hi kar 26-28 a upa an nih laiin a chhia leh tha thliar hnan an ni thin, tichuan, tui tam tha chauh kawl an nih theih phah thin a ni. An tuithat dan enna atana tehkhawng te chu hetiang hi a ni:

Parameter	Good Layer	Poor Layer	Non-layer
Archhuang	A lian, a sen, a lum	A te, lum thalo, a sawng te	Nihtur ang tiat phalo
Eyes	A liana, a tletha a, a harh tha bawk	A tezawh a leh a harh thalo	Lang ngui leh harh thalo
Vent	A sawl, hnawng, leh pink	A sawl nep, a hnawng ve deuh leh pink	A bial, a ro leh a kotlang a eng
Kumkuruh zauh zawng	Zungtang thum bawk	Zungtang thum bawk aia te	Zungtang khat aia lian meuhlo

- 2) Flourecent bulbs te chuan khaw lum lam temperature chu 21.1°C vel a nihin artui insiam tur an pui thei, incandescent bulbs te chuan eng sen an nei tama chu chu artui siamna a tanpuitu tha zawk a ni. Chuvangin, layer house-ah chuan incandescent bulbs te chu flourascent bulbs te ai chuan an thlanawm zawk a ni.
- 3) Bulbs te chu vuah ngheh an nih loh chuan thli in a chhem then thei a, a hlimthla chuan ar a ti hlau thei thin, Chuvangin bulb te chu ngheh taka vuah a ni, reflector vuah bawk tur a ni a, bulbs reflector vuahloh chuan inchung leh bang a chhun eng a, a hek thlawn mai mai a ni.
- 4) Layer performance tehfung pathum te chu per cent production (HDEP leh HHEP), Livability% leh Egg mass an ni.