

# Feeding Koi to Develop a Strong Champion Body Shape and Best Color Development

by Ray Jordan, Texas Koi & Fancy Goldfish Society

*based on seminars and conversations with Futoshi Maruyama in San Antonio, Texas April 5, 2004*

One of the goals of the annual Texas Koi & Fancy Goldfish Societies annual spring fish sale and seminars was to bring some high quality but affordable baby koi to Texas along with an English speaking Japanese koi dealer, Mr. Megumi Yoshida and a guest Japanese koi breeder. If you were able to attend our club's 10th annual spring fish sale and seminars (the first weekend in April) you could have met and talked koi with Futoshi Maruyama the current second generation owner/operator of Maruyama koi farms located in Isawa, Yamanashi, Japan.

We asked Futo for advice about feeding and growing adult female Koi to get best body shape and color development results. He drew something similar to the graph that follows:

**50F – 60F** - Do not feed adult koi. Important that koi be fasted (2-3 yr. old koi for 4 to 6 weeks/older koi 6 to 8

**weeks)** at 55F - to cause reabsorption of excess fat. Also allows koi to rest and develop stronger color purity and depth.

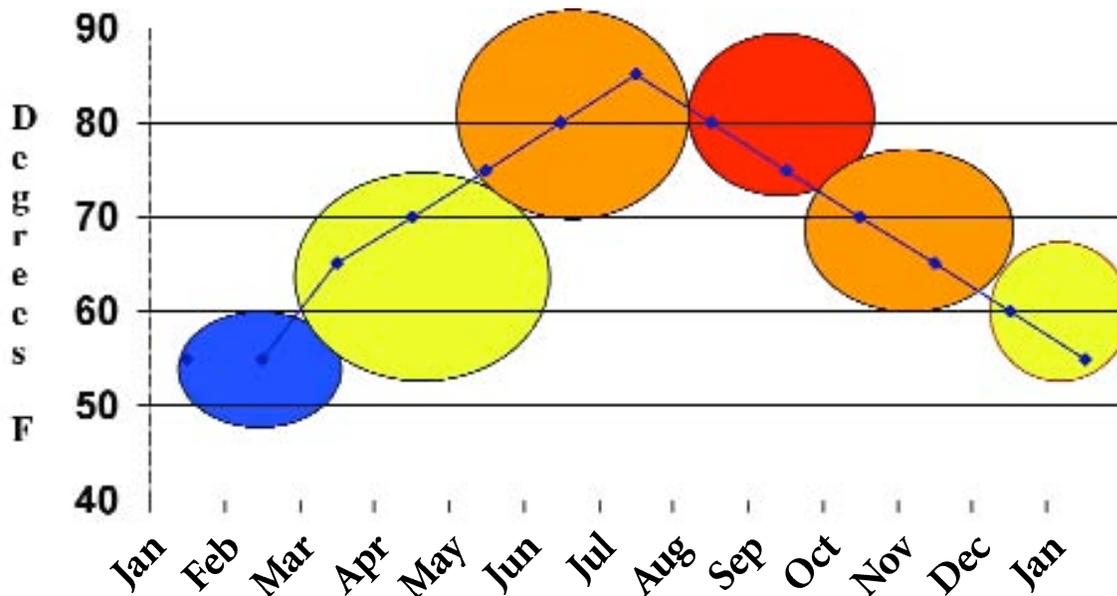
**60F – 70F** - Begin feeding low protein food (.025%) of koi body weight daily. Slowly increase to 0.5% as water temperature rises closer to 70F.

**70F – 85F** - Increase feeding of low protein food to 1.0% up to 1.5% of total koi body weight as water temperature rises.

**80F – 70F** (Water Cooling Down) - Increase feeding with HIGH protein food to 2.0% to 3.0% of body weight.

**70F – 65F** (Water Cooling Down) - Decrease feeding with LOW protein food to 1.5% to 1.0% of body weight.

**65F – 60F** (Water Cooling Down) - Decrease feeding with LOW protein food to 0.5% to 0.25% of body weight.



GRAPH SHOWING FOUR SEASON FEEDING OF ADULT KOI

Futo emphasized that there were many extremely important issues to remember when growing and feeding koi in a hobbyist koi pond.

- 1) Best results will be from ponds containing similar sized koi. Either keep all small koi (less than 14 inches), or medium sized koi (15 inches to 24 inches) or larger koi (over 24 inches) together in same pond. Mixed sized koi ponds limit larger koi from developing to their full potential. Smaller koi feed more aggressively and will get too much food and get too fat while larger koi will get less food and grow less.
- 2) Water quality and highest possible levels of aeration are most important. You must not feed more food to your koi than your filter system can handle and still maintain high water quality.
- 3) Natural sunlight is very important. If you cover your pond be aware that if you filter too much sunlight the koi's ability to develop color, especially it's shiny quality, and full depth will be prevented.
- 4) Feed fresh high quality koi food. Vitamins lose potency in a few weeks. Store in air tight containers in cool, dry area.
- 5) Never feed color food. Color food harms color layer and dulls the skin sheen. This will confuse owner as to proper condition.
- 6) Always better to feed too little than too much. Most hobbyists feed too much and feed incorrectly based on season and food type.
- 7) Koi are a four season fish. To develop best body shape it is important that two year old koi and older koi fast (not be fed) for 4-8 weeks each winter. Should be kept at about 55F during this time and allowed to rest and develop full color depth and shininess. Larger and older fish need longer fast. (8 weeks) Medium sized and younger koi can have shorter fast (4 weeks)
- 8) Feed high quality low protein food almost all year. Low protein food is between 30% to 34% protein. Try different high quality koi food brands. Some are better than others. Futo said brand is not important but thinks commercial Japanese koi foods are best. Watch white color as well as red. You want both colors to develop together and be bright, clean and deep.

- 9) Feed high quality high protein food for short period only 4-8 weeks (maximum) after water temperature starts coming down (early fall) This is when you should feed high protein food. High protein food is between 36% to 44% protein. Stop feeding high protein food when water temperatures drops below 74-75F. Increase aeration and filtration to maximum when feeding high protein food. **Watch water quality very carefully when feeding high protein food. Switch to low protein or reduce amount of food given. Many Hobbyist filter systems cannot handle.**
- 10) Estimate total koi body weight in pond and feed recommended % of food daily based on season and water temperature divided into intervals of about 2-2-1/2 hours. Takes koi about 2- 2-1/2 to digest food in warmer water and 4-8 hrs in colder water when feeding is begun. So in warmer ideal water temperatures feed 5-8 times daily the individual portions totaling daily amount needed. In cooler temperatures feed 1-3 times daily.
- 11) If you want you can continue feeding after dark but only once in evening and again once before sunrise. Koi need to rest most of night.
- 12) Watch carefully for any sign of floating koi feces. If seen you are feeding too much or too often or both. Reduce feeding or switch to better quality food.
- 13) Watch water conditions carefully. If foam is seen on surface in morning this indicates more organics than your filter can handle. You need to reduce feeding, or increase filter maintenance or increase filter size, increase aeration, or try different koi food with less protein. Turn off pond skimmer occasionally at night to better determine foam production in mornings which indicates more organics than your system can process.

Futo finished by emphasizing that three things are necessary to successfully grow a koi into Grand Champion quality. They are listed in order of importance:

- **Highest Water Quality**
- **Proper feeding and care**
- **Koi with best genetics capable of growing large and developing deep beautiful color and shiny skin ❖**

