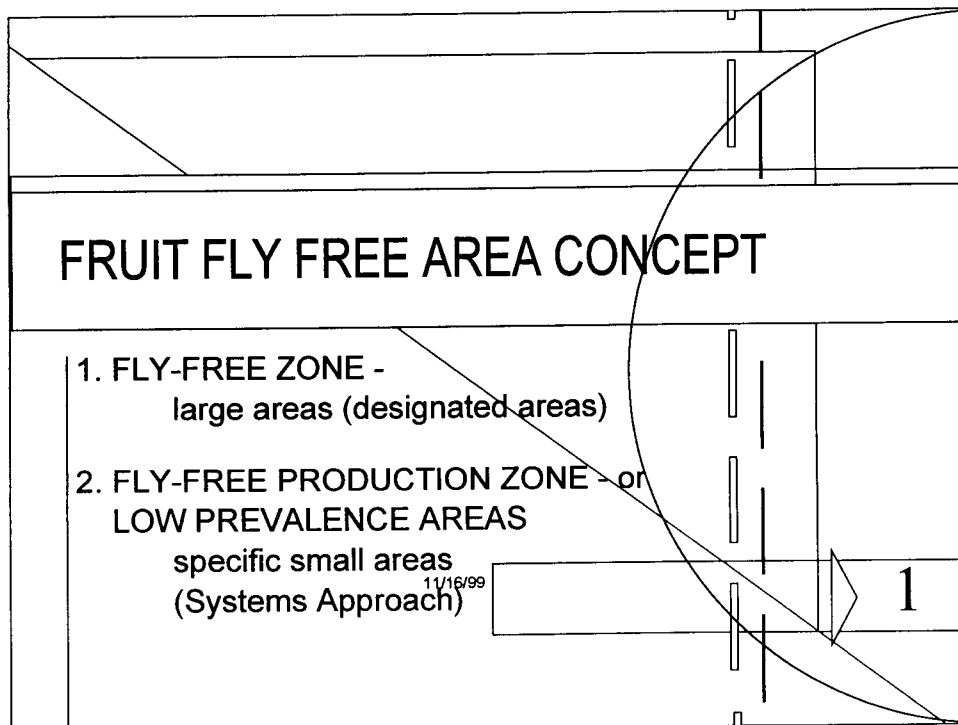


**ESTABLISHMENT OF FLY FREE AREAS
AND SYSTEMS APPROACH**

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FRUIT FLY FREE AREA CONCEPT

1. FLY-FREE ZONE -
large areas (designated areas)
2. FLY-FREE PRODUCTION ZONE - or
LOW PREVALENCE AREAS
specific small areas
(Systems Approach)

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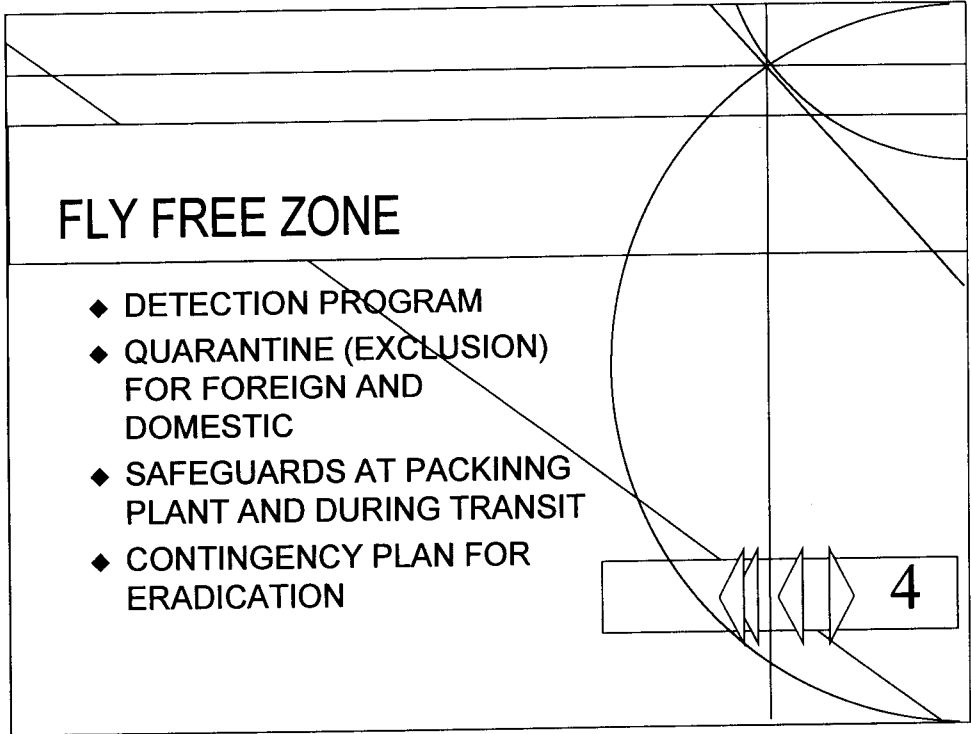
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The concept is more feasible if:

- ◆ Importing country determine target species is an important regulatory pest
- ◆ Post-harvest treatments are unsatisfactory
- ◆ The establishment is biologically, economically and politically viable

REQUIREMENTS REGARDING THE TWO MODELS OF FRUIT FLY FREE AREAS

- ◆ IDENTIFY COMMODITIES
- ◆ IDENTIFY QUARANTINE PEST RELATED WITH COMMODITIES
- ◆ INFORMATION ON AREA



FLY FREE ZONE

- ◆ DETECTION PROGRAM
- ◆ QUARANTINE (EXCLUSION) FOR FOREIGN AND DOMESTIC
- ◆ SAFEGUARDS AT PACKINNG PLANT AND DURING TRANSIT
- ◆ CONTINGENCY PLAN FOR ERADICATION

4



FLY- FREE ZONE - EXAMPLES

- ◆ SONORA, MEXICO
- ◆ ALL CHILE
- ◆ PATAGONIA, ARGENTINA
- ◆ MOSSORO, BRAZIL

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FLY FREE PRODUCTION FIELD LOW PREVALENCE AREAS

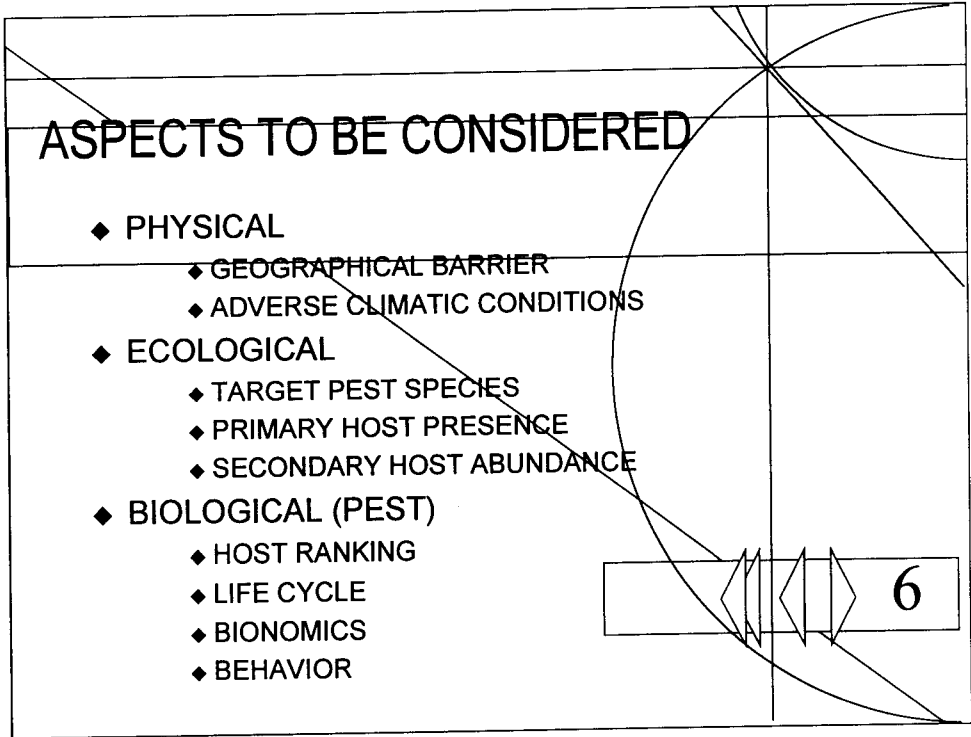
- ◆ DETECTION PROGRAM
- ◆ PEST MANAGEMENT PROCEDURES
 - ◆ BAIT SPRAY
 - ◆ SIT
 - ◆ BIOCONTROL
 - ◆ HOST REMOVAL
- ◆ STRICT CONTROL OF PRODUCTION FIELD
- ◆ SAFEGUARDS IN PACKING AND IN TRANSIT



FLY FREE PRODUCTION FIELD LOW PREVALENCE AREAS EXAMPLES

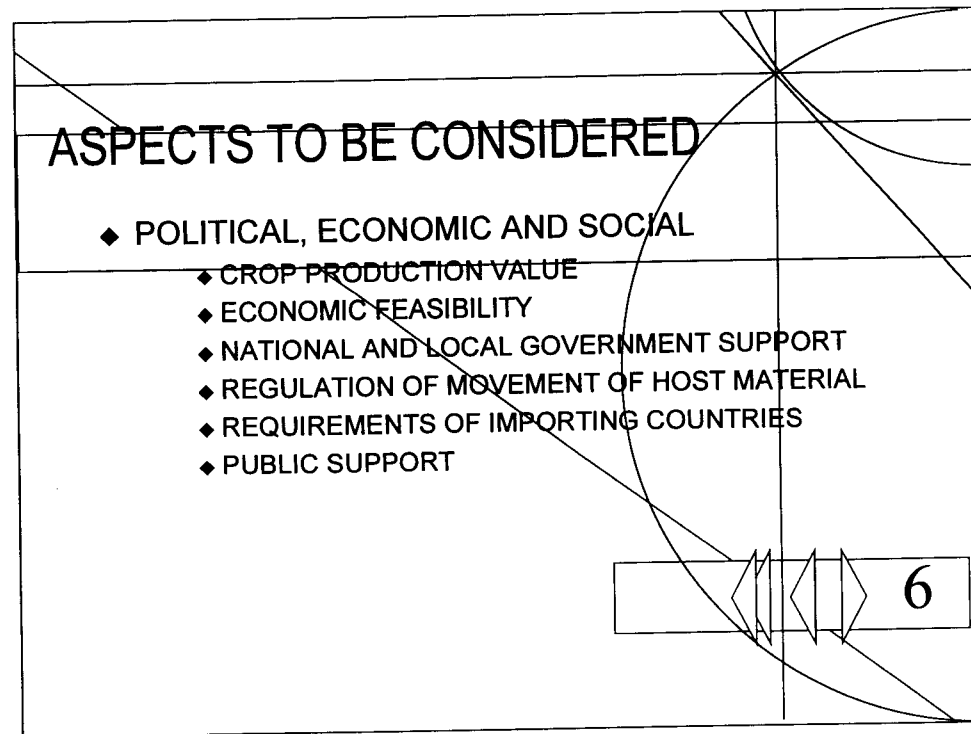
- ◆ CENTRAL FLORIDA
- ◆ SAN JOAQUIN VALLEY
- ◆ SOUTH TEXAS
- ◆ NORTHERN ARGENTINA
- ◆ NEW ZEALAND
- ◆





ASPECTS TO BE CONSIDERED

- ◆ PHYSICAL
 - ◆ GEOGRAPHICAL BARRIER
 - ◆ ADVERSE CLIMATIC CONDITIONS
- ◆ ECOLOGICAL
 - ◆ TARGET PEST SPECIES
 - ◆ PRIMARY HOST PRESENCE
 - ◆ SECONDARY HOST ABUNDANCE
- ◆ BIOLOGICAL (PEST)
 - ◆ HOST RANKING
 - ◆ LIFE CYCLE
 - ◆ BIONOMICS
 - ◆ BEHAVIOR



ASPECTS TO BE CONSIDERED

- ◆ POLITICAL, ECONOMIC AND SOCIAL
 - ◆ CROP PRODUCTION VALUE
 - ◆ ECONOMIC FEASIBILITY
 - ◆ NATIONAL AND LOCAL GOVERNMENT SUPPORT
 - ◆ REGULATION OF MOVEMENT OF HOST MATERIAL
 - ◆ REQUIREMENTS OF IMPORTING COUNTRIES
 - ◆ PUBLIC SUPPORT

LOW PREVALENCE AREAS AND THE SYSTEMS APPROACH CONCEPT

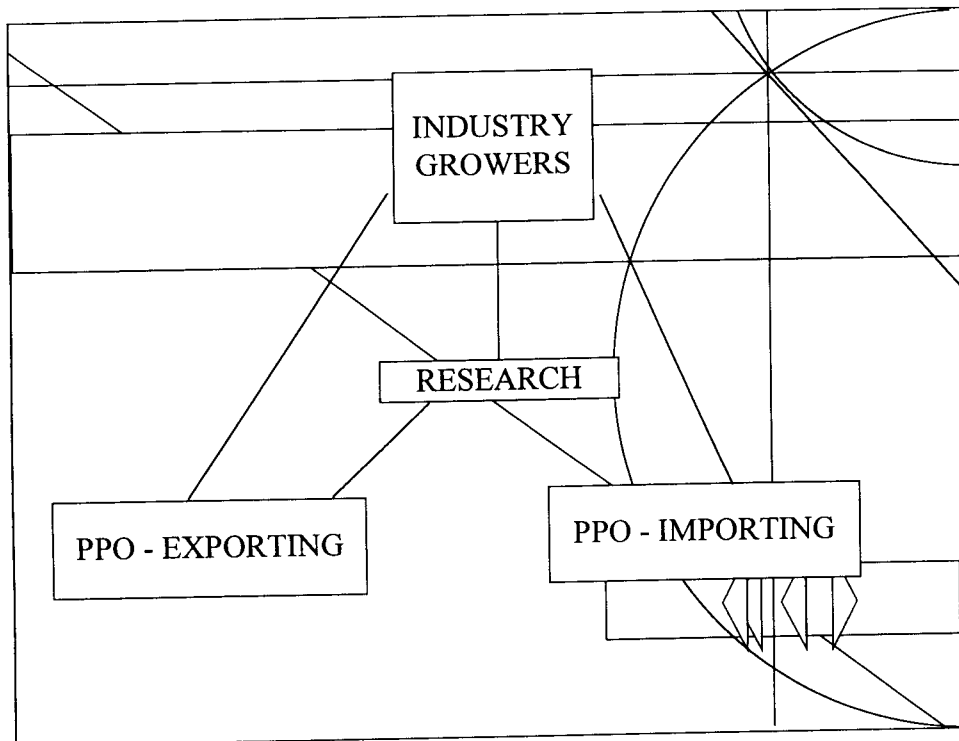
- ◆ THE SYSTEMS APPROACH CAN BE DEFINED AS THE INTEGRATION OF THOSE PREHARVEST AND POSTHARVEST PRACTICES USED IN PRODUCTION, HARVEST, PACKING, AND DISTRIBUTION OF A COMMODITY WHICH CUMULATIVELY MEET THE REQUIREMENTS FOR QUARANTINE SECURITY (Jang and Moffitt, 1995)



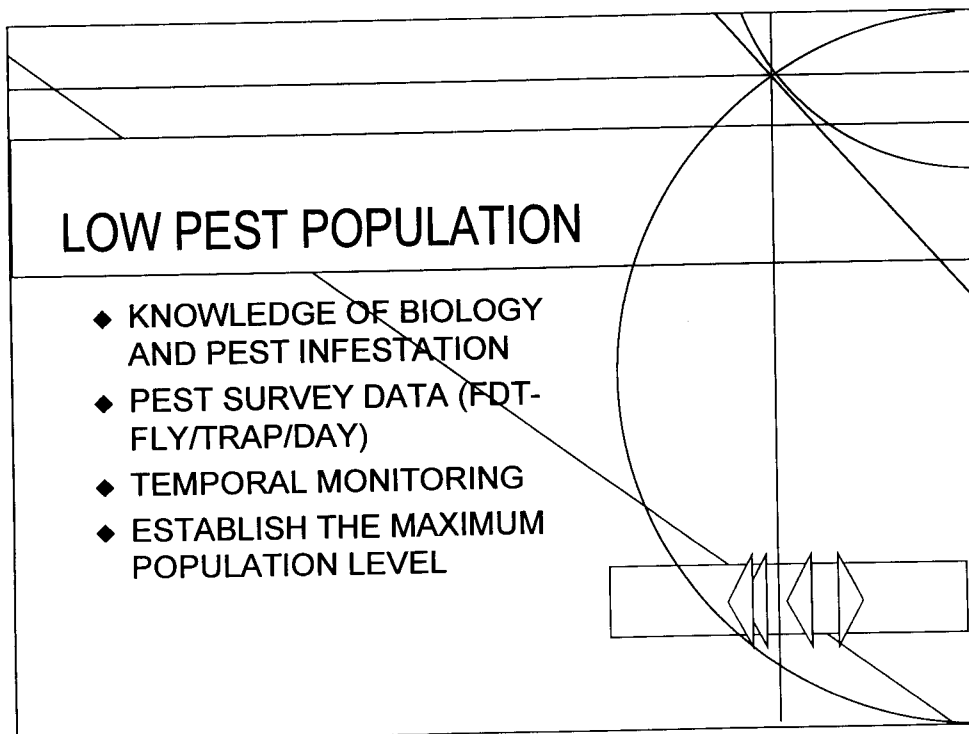
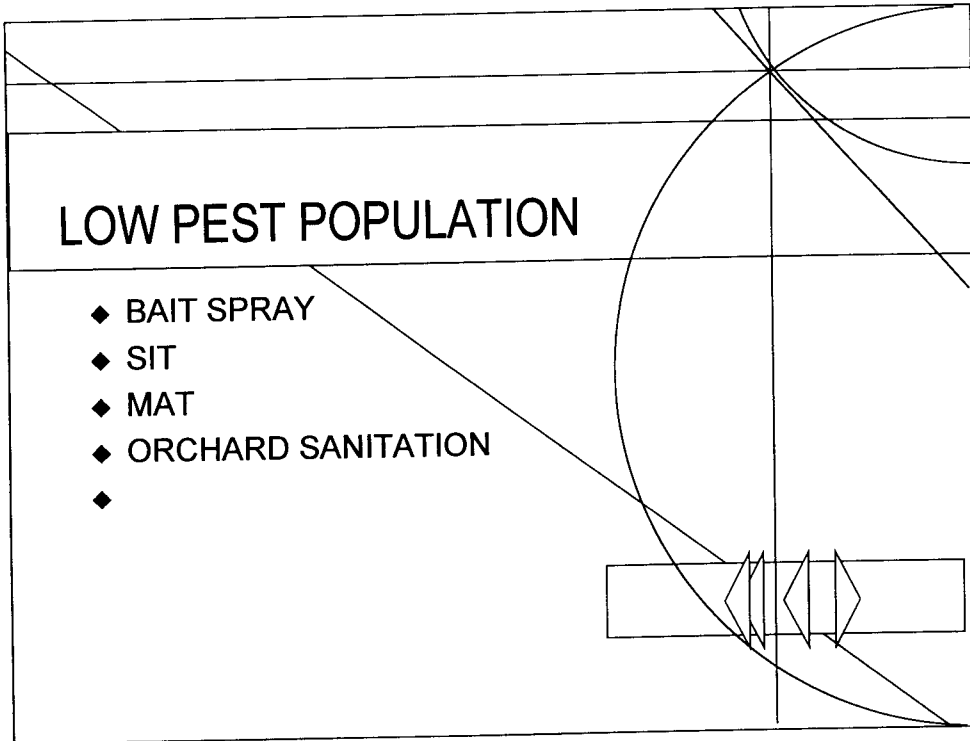
LOW PREVALENCE AREAS AND THE SYSTEMS APPROACH CONCEPT

- ◆ THE SYSTEMS APPROACH INTEGRATE BIOLOGICAL, PHYSICAL, AND OPERATIONAL FACTORS THAT CAN AFFECT THE INCIDENCE, VIABILITY, AND REPRODUCTIVE POTENTIAL OF A PEST INTO A SYSTEM OF PRACTICES AND PROCEDURES THAT TOGETHER PROVIDE QUARANTINE SECURITY





- ### BASIC ELEMENTS
- ◆ LOW PEST POPULATION AT FIELD MEANS LOW QUARANTINE RISK
 - ◆ FRUIT IS LESS SUSCEPTIBLE WHEN UNRIPE OR AT HARVEST TIME
 - ◆ GOOD AGRICULTURAL PRACTICES
 - ◆ QUALITY ON PACKING HOUSES AND TRANSPORTATION
 - ◆ FINE TUNING BETWEEN PPO (IMPORTING AND EXPORTING)
- Below the last bullet point is a box with a double-headed arrow pointing left and right.



PREHARVEST

- ◆ GROWING RESISTANT VARIETIES
- ◆ ENHANCE NATURAL RESISTANCE (GA)
- ◆ PHENOLOGY OF THE PLANT
- ◆ FRUIT CHEMISTRY
- ◆ HARVESTING MANAGEMENT
- ◆ REGULAR INSPECTION



POSTHARVEST AT PACKING HOUSE

- ◆ CULLING - REMOVAL/CUT STEM
- ◆ WASHING - REMOVAL OF DUST
- ◆ GRADING - QUALITY EVALUATION
- ◆ DISEASE CONTROL - HOT WATER DIP
- ◆ DRYING - FORCED HOT AIR
- ◆ WAXING - INCREASING SHELF LIFE
- ◆ SORTING - BY SIZE/WEIGHT/COLOR
- ◆ PACKING - BOXES, WRAPPING





POSTPACKING

- ◆ POST INSPECTION SAMPLING (VISUAL, CUTTING, ELECTRONIC)
- ◆ PRE-CLEARANCE, CERTIFICATION AR ORIGIN
- ◆ PALLETS
- ◆ CONTAINER
- ◆ TRANSIT
- ◆ INSPECTION UPON ARRIVAL (AIR, SEA, LAND PORT)
- ◆ DISTRIBUTION
- ◆ SHIPPING
- ◆ SUPERMARKET CHAIN, FOOD STORES



SYSTEMS APPROACH EXAMPLES

- ◆ SHARWIL AVOCADOS- HAWAII TO CONT. USA
- ◆ HASS AVOCADOS - MEXICO TO USA
- ◆ APPLES - NW USA TO JAPAN
- ◆ CHERRIES NW USA TO JAPAN AND KOREA
- ◆ TOMATOES - ISRAEL TO USA
- ◆ STONE FRUITS - CALIFORNIA TO NEW ZEALAND
- ◆ PAPAYA - BRAZIL TO USA



CONCLUSION

**FRUIT FLY FREE AREA,
LOW PEST PREVALENCE AREA AND
SYSTEMS APPROACH**
ARE CONCEPTS WHERE EVERY TOOL AVAILABLE
SHOULD BE APPLIED TO ACHIEVE THE
QUARANTINE SECURITY

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