



SC RESPONSE TO THE FORMAL OBJECTIONS RECEIVED AT CPM-9 (2014)

(Drafted by TPPT September 2014; approved by SC 2014 November)

Cold treatment for *Bactrocera tryoni* on *Citrus reticulata* x *C. sinensis* (2007-206F)

	Contracting Party	Formal objection and Explanation	SC Response
1	China	China believes that the conditions for adopting < Cold treatment for <i>Bactrocera tryoni</i> on <i>Citrus reticulata</i> x <i>C. sinensis</i> > (CPM 2014/03_08) are not perfectly satisfied and formally objects to adopting the draft standard. The reasons are as follows: 1. High security of phytosanitary treatment requires a large number of studies and test data. The draft standard is based on 2 references among which only 1 is drawn from laboratory studies. And as the major basis for the draft standard, the study by De Lima <i>et al.</i> (2007) is less rigorous and insufficient in data record and test design, which can hardly support the cold treatment standard.	The original experimental data submitted by the NPPO for the evaluation of efficacy, feasibility and applicability of these treatments were analyzed by the TPPT and found to fulfil all the requirements stated by ISPM 28 regarding sufficiency and robustness of data and requirements for scientific rigour.
2	China	2. As the bases for the draft standard, the study by De Lima <i>et al.</i> (2007) tests only a few of cultivars while the difference of cultivars has not been taken into consideration. The extrapolation of the findings from a few cultivars to all the cultivars may incur phytosanitary risk.	The TPPT is unaware of evidence that would suggest cultivar differences in cold treatment efficacy against <i>B. tryoni</i> in <i>C. reticulata</i> x <i>C. sinensis</i> (Tangor). In accordance with ISPM 28 section 3.2.1, the TPPT accepts the treatment applicability for all Tangor cultivars.
3	China	3. For most fruit flies, usually the third instar is the most tolerant larva stage for low temperature. The first instar larvae of <i>Bactrocera tryoni</i> were tested by De Lima <i>et al.</i> (2007), the reliability of the tolerance needs to be validated. Especially, it deserves much attention that there is a broad difference between the test results in the references and the phytosanitary treatment requirements which has been proven to be effective by the practical application by the contracting parties. For that reason, the draft standard should be treated cautiously and further test is in need.	De Lima <i>et al.</i> (2007) demonstrate that there were no statistically significant differences between the life stages, but L1 showed the highest numerical level of cold tolerance. Literature demonstrates that young and old larvae are equally tolerant to cold and more tolerant than eggs in orange (e.g., Hill <i>et al.</i> , 1988 ⁱ) and lemon (e.g., Jessup <i>et al.</i> , 1993 ⁱⁱ), that young and old larvae are equally tolerant to cold in Lisbon lemons and that L1 was the most tolerant lifestage to cold in Eureka lemons. Taking into account these data, the TPPT considers the choice of the L1 lifestage as the most tolerant to the treatment valid.
4	China	4. The ED value of a study is fixed when the tests are completed. However, the ED value was 99.9989 in the draft submitted for member consultation in 2009, 99.9980 in the draft submitted to CPM 7, 99.9970 in the draft revised by the TPPT in 2012, and finally 99.9986 in the current draft to be submitted to CPM 9, which shows that the draft	The minor differences in the ED values determined by the TPPT were due to refinements in the method used for its calculation, e.g. as documented in section 6.9 of the TPPT Report of the December

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		standard is obviously inadequate in rigorousness.	2012 TPPT meeting in Nagoya, Japan.
5	China	5. In the draft standard submitted for member consultation in 2009, there were two treatment schedules, namely “2°C or below for 16 continuous days” and “3°C or below for 16 continuous days”. Without support from further test data or other scientific justification, the current draft directly deletes the schedule “2°C or below for 16 continuous days” and keeps only the schedule “3°C or below for 16 continuous days” based on the only 1 empirical reference. China considers that such deletion is poorly scientifically justified.	The TPPT assessed that the study by De Lima <i>et al.</i> (2007) demonstrates that the 3°C treatment for 16 continuous days has an ED of 99.9986 for tangor, which assures the quarantine security needed from a treatment. Hence, the 2°C schedule is superfluous. This is also in accordance with Article VII.2G of the IPPC. In regard to the one empirical reference, the TPPT agreed that the reference conformed with ISPM 28 requirements regarding sufficiency of data and requirements for scientific rigour.
6	China	6. Pre-cooling before treatment, temperature monitoring and recording during the treatment have a direct influence on the efficiency. The draft standard sets only the temperature and duration requirements for the treatment without illustrating the approach to meeting such requirements. The wording in the draft standard “Pre-cooling of the commodity to treatment temperature may be required” is ambiguous, and some important operational requirements such as temperature monitoring and recording are not addressed in the draft at all. Should the draft standard be approved, the ambiguous and incomplete operational requirements could render the treatment invalid. Considering the wide application and significant influence of the cold treatment worldwide, it is recommended that taking the example of setting the series of irradiation treatment standards, an comprehensive operational standard similar to < <i>Guidelines for the Use of Irradiation as a Phytosanitary Measure</i> > (ISPM 18) be set in advance to standardize the operational requirements including pre-cooling, temperature monitoring and recording, and then proceed to specific cold treatment measures.	The TPPT considered that pre-cooling, temperature monitoring and recording are important operationally but are not part of the treatment schedule. NPPOs certifying the use of cold treatments should therefore ensure these operational issues are managed appropriately. Further guidance to NPPOs on these issues will be addressed by the drafting of the ISPM on requirements for the use of temperature treatments. Reference to pre-cooling has therefore been removed from the draft treatment schedule.
7	China	7. China further maintains that the treatment standards differ from the conceptual standards. It has a direct relationship with the spread of pests infesting agricultural products and the achievement of the purpose and responsibility of the International Plant Protection Convention. The treatment standard approved by CPM should be based on sufficient test data or a large volume of the practical application of the treatment by the contracting parties. If the method concluded from a few tests was promoted globally in a form of ISPM, it would turn the contracting parties into trial sites of new methods and technologies and finally significantly increase the risk of pest spread.	The TPPT considers that the treatment submission conformed with ISPM 28 requirements, including the level of evidence provided.

ⁱ Hill, A. R., C. J. Rigney & A. N. Sproul. 1988. Cold storage of oranges as a disinfestation treatment against the fruit flies *Dacus tryoni* (Frogatt) and *Ceratitis capitata* (Wiedemann) (Diptera: Tephritidae). *J. Econ. Entomol.* 81 (1): 257 – 260.

ⁱⁱ Jessup, A. J., C. P. F. De Lima, C. W. Wood, R. F. Slogett, A. M. Harris & M. Beckingham. 1993. Quarantine disinfestation of lemons against *Bactrocera tryoni* and *Ceratitis capitata* (Diptera: Tephritidae) using cold storage. *J. Econ. Entomol.* 86 (3): 798 – 802.