118	aldrin. Insecticide. (Julius Hyman)
177	phenyl amino cadmium dilactate. Fungicide for grass. (Niagara)
224	zinc mercury chromate. Fungicide used in treating seed corn.
269	endrin. Insecticide. (Julius Hyman)
406	captan. Fungicide.
448	2-cyclohexyl cyclohexanol. Mosquito repellent developed by Navy.
497	dieldrin. Insecticide. (Julius Hyman)
604	2,3-dichloro-1,4-naphthoquinone. Fungicide. ("Phygon," U. S. Rubber)
612	ethyl hexanediol. Mosquito repellent. (Carbide & Carbon Chem.)
658	copper zinc chromate complex. Fungicide. (Carbide & Carbon Chem.)
666	benzene hexachloride. This term was discouraged by a firm that sells a patent medicine so named.
711	isodrin. Insecticide.
899	di-2-ethylhexyl phthalate. Miticide, apparently obsolete. (Amer. Cyan. Carbide & Carbon Chem., Leffingwell)
923	2,4-dichlorophenyl ester of benzene sulfonic acid. Miticide. (General Chem.)
1068	chlordane (Velsicol Corp.)
1080	sodium fluoroacetate. Rodenticide. (Monsanto)
3422	Aryl alkyl thionophosphate or parathion. thiophos. (Amer. Cyan.)
3869	S-carbamyl methyl-O, O-dimethyl-dithiophosphate. Not yet marketed. (American Cyanamid)
3901	O. O. dimethyl S-alphamercapto acetyl urea dithiophosphate. Not yet marketed. (American Cyanamid)
3956	toxaphene.
4049	malthion. Insecticide. (American Cyanamid)

上記名称は次のものによつた。

J. Econ. Ent., **45** : 165～6 (1952). ibid., **48** : 112～115 (1955). ibid., **48** : 345 (1955). ibid., **49** : 141 (1956). 及び Entoma 10-th Ed. 1953～1954. pp. 44～48. (Published by the Entomological Society of America).

Outline of Pyrethrum Supply in Japan. Syozo HIRAI (Pyrethrum Inspection Service, Institute of Insect Control, Kyoto University, Takatsuki)

我国の除虫菊需給の概要 平位省三 (財団法人 防虫科学研究所 除虫菊検定室)

著者は防虫科学 17 巻 61 頁 (1952) で第二次大戦後の我国除虫菊並にその検定制度について報告した。今回はその後の我国除虫菊事情の変化について述べ，更に R. B. Stoddard 氏が最近 (Soap and Chemical Specialities. **32**, No. 1, 1956) 日本は除虫菊の輸出力がなくなつたと云つてゐる誤解に対し我国除虫菊工業は Allethrin の自給開始と Synergists の普及により長足の進歩をなし天然ピレトリンの節約が出来る様になつたので，除虫菊の価格が安定すれば本年も相当量の輸出力があり 1～2 年後には 1000 トン以上の除虫菊乾花輸出も可能である旨を述べた。

In June issue of "Scientific Insect Control" **17**, 61, 1952, I wrote about pyrethrum supply situation in Japan after the War Ⅱ. This time I want to report about change of state since then and also to make some mentions against Mr.

Russel B. Stoddard's opinion published in "Soap and Chemical Spécialities" January 1956, to the effect that Japan is losing export power in pyrethrum.

In contrary to Mr. R. B. Stoddard, I have a firm belief from technical viewpoints that Japan still has a rosy future as an export country of pyrethrum. Generally speaking, production of natural raw materials has tendency to be affected by the market price in the previous year, but in the instance of pyrethrum the crop amount is influenced by the market of three years ago, now that the plant bears the flower only in the third year after sowing. Keeping this point in mind and reviewing the current situation of the cultivator, my opinion is not so pessimistic.

Right after the War I, in Japan too the significance of pyrethrum was neglected at all, in which consequences the crop went down to as low as 1200 tons in 1949. A group of agricultural chemical minded therefore have started campaign for protection and promotion of the industry with confidence in the technical value of the plant and appealed the cultivators to do efforts for prevention of the negligence, explaining importance of overseas markets. As expected, the public began to rerecognize the real value of the plant about as from 1952, and the situation was so much bettered in 1953 that we could predict 3000 tons including some stock lots left over from the predious year. The weather condition of 1953, however, was so unfavorable for growers. In the spring, we had too much rainfall and it spoiled the flower quality. To make the situation worse, the average temperature was very low in the summer, resulting in less demand for the domestic consumption. The price dropped radically and the growers lost interest in the cultivation. The lowered price level, on the other hand, created a clue for promotion of the export, and 1077 tons were shipped abroad to make record after the War I. In 1954, the crop was 2200 tons, but the price soared unexpectedly on account of remarkable increase of demands for use in manufacture of the extract which was brought to the lime light for the activating value in the knockdown property of DDT and BHC insecticides.

In 1955, the crop was only 1700 tons as a reflection of the heavy blow by the low price during 1953, while the domestic demands were so active as to establish the biggest consumption in recent years, because of an extraordinary climatic conditions in the summer. Besides, revived orders of China spurred up the price hike and the market stayed aloft at between 40 to 60 cents per lb. without any sign of coming down. The governments, therefore, finally decided to import 100 tons from Kenya & Congo to check the limitless advance of the price. It is apparent that this import manipulation have misled foreign observers to take it for granted that Japan was losing export ability in pyrethrum. The said 1700 tons and the imported 100 tons were roughly disposed of as follows:

900 tons for making mosquito coils
670 tons for making pyrethrum spray, extract, and other insecticides for agricultural uses.
120 tons for export to Argentine and other countries
90 tons for export to China in powdered form
20 tons for export to China as dried flowers

In the mention of 1955, we cannot overlook two noteworthy changes in manufacturing pyrethrin type insecticides. They are an extended adoption of synergists and the start of allethrin production. As a matter of fact, the anti-mosquito incense coil is the biggest item of the flower consumption in Japan, while allethrin has proved that its activating property makes the coil remarkably more effective, suggesting a saving of flowers in that wasteful way of the use, and the production of such allethrin is now expected to be over 15 tons annually in the consistency of 90%, according to the present schedule. As to synergists, the demands are now rapidly increasing in the manufacture of spray and aerosol compounds of pyrethrum base. The makers in the meantime came to recognize advantages, and in addition to it, the agricultural authorities has nominated it in 1955 to a

grain Protectant. These two new developments will certainly change the whole picture of pyrethrum consumption in Japan, but anyway Japan will consume the total of 1500 to 2000 tons of flowers annually from now on.

The crop of 1956 is estimated at 2200 tons or more on account of active interest of farmers since 1954, and the 1957 crop may come up to 2500 tons. If the changeable market were controled by allethrin to settle down at about 35 cents per lb., the crop increase to 3000 tons will be feasible in a few years and the governments aim at 4000 tons in the 6 Year Economic Plan.

In conclusion, I should say that Japanese growers will be able to produce pyrethrum of good quality, provided the market is stabilized at an adequate price. I believe Japan thus can keep on export at least to the extent of 1000 tons in 1.0 to 1.2% guarantee in a few years time. In this sense I see a bright prospect in export capacity of Japan still now.

抄　　錄

p,p'-DDT 残滓沈澱に接触させた ヒラタコクヌストモドキ (*Tribolium confusum*) 死虫率の雌雄差

Loschiavo, S. R. (1955) : Canad. Ent., 87, 107～110.

殺虫剤に対する昆虫の感受性は雌雄により異ることが多いが，ここでは一定の羽化時期のヒラタコクヌストモドキを種々の温度下で 5% p,p'-DDT 残滓に接触させた死虫率の雌雄差について報告する。

供試虫はあらかじめ蛹のとき雌雄を分けておき，小麦粉 95%，麦芽 5% の重量比の培地で羽化させたもので処理前 24 時間絶食した。なお飼育温度は 32 °C，関係湿度 70 — 75 % である。 DDT は ベンジンを溶媒として 5% とし，メチレン青で染色した擦り硝子上に 100 sq. cm につき 1 ml の割で噴霧し，溶媒蒸発後細い結晶が一様に拡がつた板上に径 10 cm，深さ 2 cm のプラスチック製リングをおきこの中に供試虫 50 匹 を放つて自由に行動させる一方，麻酔をかけて行動を封じた区を作り両者の死虫率に有意差がないことをたしかめた。処理後各区毎に注意深く餌の入つた広い瓶に移し前記の温湿度を保つて結果を観察した。

羽化 6 週間後のヒラタコクヌストモドキを 32°C で 2 時間 DDT に接触させた結果雌の平均死虫率は，処理後 48 時間後では 70% であるに対して，雄では 18 % にすぎず，64 時間後では雄の 3.5 倍に達し，また羽化後日数のながい区の雄は同区の雌より死虫数が少い。羽化 1 月後の雌雄を 16—32°C の 5 温度階級で 3 時間処理し，2 日後と 7 日後の死虫数を見たところ，雌は各温度階級とも雄より多く死に，雌雄の合計死虫数は処理温度が上るにしたがつて多くなつた。又雌は処理後短時間に多く死に，雄は比較的長時間にわたつてだらだらと死ぬことがわかつた。

Gough (1939) は羽化 4—5 週間後のヒラタコクヌストモドキの雌は雄より自己中毒物質を多量に出すと言つているが，本実験は別に対照区を作りこの死虫率に有意の差を認めなかつたので，雌雄の死虫率の差は殺虫剤にたいする雌雄の感受性の差と見なされる。

この実験の結果定まつた羽化後日数，一定温度の条件下では ヒラタコクヌストモドキの雌は雄より 5% p,p'-DDT にたいして感受性が強いことを示すもので，殺虫試験には供試虫の性別，羽化後日数を考慮する必要があることがわかつた。 (安江，河田)

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